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Parturition in the Domesticated Animals.

A FEW CASES I HAVE MET IN PRACTICE.

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(Presented to the Mid-West and South Wales V.A.)

Mr. President and Gentlemen,

I am safe in saying that it is possible no other subject would appeal more to our meeting here to-day than parturition, knowing as I do that most members of this association have to do with obstetrical work, and to the country practitioners nothing is of more importance. The subject is, however, wide, and I wish to restrict my remarks in these notes, which are written chiefly with the idea of provoking a discussion.

It is not my intention or desire to mention details with which you are all familiar. Stock owners having parturient animals are more eager to have expert advice and assistance in malpresentations than formerly (in my opinion), especially in valuable animals. I believe that clients now send more readily than some years ago.

I may say that my knowledge of obstetrics has not been gained by reading textbooks or college notes. However, I think I have seen somewhere that a good obstetrical veterinary surgeon should have good muscle, sound judgment and manipulative powers, and a clear head.

Is the operator justified in pulling away a fœtus with pulley blocks? Yes, I say that he is, if he knows that everything is right, and he is short of help. Also in my opinion you get steady and even traction (use an anæsthetic). It is a good policy in practice never to be too sure with what one has to deal, as it often as not turns out to be quite different from what we expected; clients and those about one as a rule are always anxious, and often ask when we have made an examination, what the presentation is. To both the knowing and anxious I tell them to "wait and see."

No hard and fast rule can be made respecting obstetric work, as we all know that nearly every case differs in some way. For instance, we may be called to three breech presentations in one week, yet each case vary in many ways. One case may be quite an easy matter, a second not so easy, and in the third one we are quite unable to carry out the teaching to push the fœtus forwards, get up the hind legs and deliver as a posterior presentation in the usual way. On Sunday, 26th February last, I was called to a calving case that will illustrate what I mean. The patient was a large roomy cow, and after examination I found I had twins to deal with: one a breech presentation and laid on its side; the other calf was placed underneath this one with head and one fore-leg presented, both in the passage together. I delivered the breech one first; I had no difficulty whatever after pushing back the head and feet of the calf which was underneath. As I have said the patient was one of those roomy ones, otherwise I am afraid my task might have turned out much more serious and prolonged.

In performing embryotomy we are taught never to sacrifice skin, but keep it for traction; I believe, too, that it is sound advice never to attempt to cut off any part of a fœtus until first secured. However, in practice I have found this hardly correct, for in many cases I have cut at anything I could touch that seemed to be interfering with delivery.

With regard to parturition in the cow, I only propose giving notes of two difficult cases.

Case 1.—June 6th, 1919. Called at midnight to a red dairy shorthorn cow, third calf. On my arrival I found five men had been trying to get calf away for over two hours (breech posterior presentation). They had got the calf out of passage as far as the sacrum, and had to give it up as it was impossible for them to deliver it. When I examined the cow and calf, I found the calf wedged, and all my efforts were in vain to move it, so I set to work and removed all that was out and then got away bowels and all other organs and removed all the ribs I could get at, suspecting that the calf had two heads, which proved to be true. Finally, I got part of the trunk that was left tilted round and caught a foreleg, and a head came to me, so I found another foreleg and pulled them next into the region of passage. Again passing my hand back I found another head, so I resolved to remove one head and forelegs. This I did after a lot of hard work, first removing one foreleg at the shoulder and then the other one; and finally got the head fixed and removed it. I had not much trouble in getting the other head and forelegs away. I must say here that the cow stood on her feet all the time, and commenced to feed as soon as food was given her, although it took me almost three hours to get the calf or calves away. The cow went on as if nothing had happened more than a normal birth; as for myself, I did not feel "fit" for a couple of days.

Case 2.—3rd May, 1920. Called to a half-bred Dutch cow; on my arrival I found that all the handy men in the district had been trying to calve her,

but could not succeed inasmuch as there was neither feet nor head to get hold of. When I examined the cow I found a large lump of something in the commencement of the passage. What it was I could not say, and after trying to push it back for some time, to get my hand around to try and find out what I was dealing with, I could not move it. I had a talk to the owner and he agreed that I should do whatever I thought was best. I obtained therefore, a long calving hook and fixed into the lump and put two men to pull steadily, and to my very pleasant surprise out came the lump of flesh, which proved to be a calf of the following description (a monstrosity). The creature was of considerable size with all four legs lying close together at the shoulders. The abdomen was open and all the viscera external to the body; the pelvis was open, the spine bent back at about its middle, so that the pelvis was over the shoulders. Altogether, it presented such a mass that it seemed almost incredible that I got it away. This cow remained on the ground for seven days, but made a good recovery and calved again this last year.

I should like to state here that I delivered a half-bred Hereford cow of eight calves in three years: (1) twins, (2) triplets, (3) triplets; and again, in June, 1919, a red dairy shorthorn cow, of three calves, two alive, one dead.

Parturition in the Cow.

The following applies to the mare:—It is interesting to note that in about 50 per cent. of twin pregnancies in the mare, birth is premature and the foals are usually dead; even if carried full time and born alive, they seldom live long afterwards—sometimes one lives, but very rarely both.

Twins in the mare are said to be due to two successive impregnations and are in each horn provided with separate membranes; and in consequence one may be born some considerable time before the other, or one may be aborted and the other carried full time. Both may be in one horn having one chorion, but separate amniotic sacs.

The foal, it is said, only lives two to four hours from the commencement of parturition. Multiple pregnancies, being small, are generally easy of delivery; when both enter the passage together they give rise to dystokia; if there be a posterior and anterior presentation, it is usual to push back the anterior presentation and deliver the posterior one first, for if the posterior one be left, it will have a greater tendency to come into the passage during the delivery of the other. In foaling a mare I always give chloroform if there is going to be trouble in getting the foal away. If weather is favourable I prefer an open field or paddock to foal a mare: she seems to stand better, and also one can place her in whatever position desirable.

Dystokia due to deviation of head and neck.—There are a great variety of positions in which we find the head and neck; the head may be turned to one side, or we may have downward deviation of the head between the anterior limbs. In these presentations the mane of the foal is a good guide in diagnosing. Again, the head may be thrown back and unreachable. I know of no more difficult presentation in the mare than this. In one case I had to deal with last year, even after I had removed both fore limbs at the shoulder, I found it impossible to get at the head and neck. I believe as a rule, delivery in a presentation like this can only be effected by performing embryotomy lower down the neck.

Breech Presentation in the Mare.—These are perhaps amongst our most difficult cases, especially if in a large animal. Raising the hocks and securing the hind legs to bring away in a posterior position is well-nigh impossible in some breech presentations.

In June, 1919, I was called to a four-year-old Shire mare, first foaling, that could not foal. On my arrival I found that she had been in labour for about two hours and trying to foal. The mare was very quiet and of a good temper. On my searching her, I first found the tail, then a hock, and seeing that I could not get the hind hind leg up, got hobbles, cast the mare in a rick yard, and chloroformed her. After hard work I got a hind leg into the passage (the right leg), then for half-an-hour I searched for a second leg, but could not find one. The foal was pulled out somewhat, and, getting my hand around root of the tail and in front of the tail, I searched for, but could not find, another leg. I began to think that the left-hind-leg had been turned up over the back. I then tried a long hook, but could not come in touch with the absent leg—for absent it was. So seeing that I could not get it, I said to the owner I would try delivery by the one leg, and to my surprise the foal came away easily, and alive, but with only one hind leg—the right one. There was about four inches of tissue covered with hair protruding from the left acetabulum instead of a left leg.

Another difficult form of presentation in the mare is when all the four limbs are in the passage. If possible it is usual to try and get the hind legs returned well into the uterus, but care is necessary or the womb may be injured by the hind feet when traction is applied to the front limbs. Sometimes a better plan is to remove the fore-limbs at the shoulder and make a breech presentation at once. In three cases I have failed to do this. I could only amputate the fore-limbs as far as the knees; of course, when this is accomplished there is not so much danger of injuring the uterus when traction is applied to the hind legs.

Parturition in the Ewe.—Obstetric work in this animal is light, and fairly clean and not at all laborious; and, as a rule, very satisfactory. I find clients are always ready and willing to pay for such cases. If I find the lamb in a difficult position to reach I always get one or two men to hold the ewe up by the hind legs in much the same way as one has young pigs held for castration. Dystokia is due in most cases to misdirection of the head of the lamb; I find it good practice in lambing an ewe to take off one or both fore-legs and to get up the head, using a cord.

The Sow.—I have always found the sow a troublesome patient in parturition. She requires a lot of

time, for we get awkward complications, such as eversion of the rectum and vagina. Obstetric works as a rule are not very satisfactory.

The Bitch.—This patient requires very careful handling and is very liable to septic conditions. I always use pessaries. Most of my experience has been with terriers, and stag and fox hounds. Malformations occur in the bull type. I believe anterior presentations (one or both forelegs) are common, and often the back extraction is easy as a rule. I use two different classes of human forceps which I find very satisfactory.

The Cat.—My parturition cases with feline patients unfortunately are not very creditable; nearly every patient has died in my hands, therefore I doubt whether all can have nine lives. I always give an anæsthetic. There is an awful odour about the cat and dead kittens which I do not like.

Gentlemen, I thank you for the hearing you have given me.

Discussion.

Mr. Watson opened the discussion, mentioning that he had had several cases of breech presentation in the mare. In one case even after the abdomen was opened it was only with great difficulty carried out. Foaling with the head away he found a rather difficult matter, it being necessary to use a hook to bring the head in position, which needed very great care. He suggested that when bringing the head up, it were better not to try to put the legs back until the head jammed. In lambing it was his practice to use three cords, one on each front foot and one for the jaw. His experience with dogs had been a little unfortunate. He did not use pessaries, but had the bitch held up by the hind legs, flooding the womb with a solution of permanganate of potassium. With cats, he had found that when they were brought they were usually in a very septic and unsatisfactory condition.

Major Taylor said that during two years which he had just completed in a more or less extensive dairying district he had sometimes three or four calving cases a day, and he was glad to think he had completed those two years, as they had been years of strenuous and hard work. He had come to the conclusion that it was inadvisable to use pulleys, only as a last resort, and that properly regulated traction was more practicable. He had been adopting a system lately of flooding the womb with some warm soapy water from an elevated can to which was connected a flexible tube; this he had found very satisfactory in dry calvings. He mentioned the case of a valuable Holstein heifer, calving for the first time. He was called after the herd men had been attempting to calve her for some time. On introducing his hand he found a solid mass, apparently composed of cartilage and bone, which refused to yield to manipulative treatment after over three hours' work. On *post-mortem* the obstruction was found to be a solid mass of soft bone, cartilage, skin, etc. The most difficult cases he had had in the past few years were those of "cleansing before calving," as it is miscalled by owners. When one arrived one found it was not fœtal membranes, but the intestines of the calf; and what had happened was that the calf has been turned, inverted and burst, and its contents were in the passage. He had found the best way was to cut through the calf's spine with a flexible saw (purchasable from "surplus stores" for 5s. 6d.) and when that had been done the body could be removed in halves after taking off the legs at the point of junction, comparatively easily.

Mr. Codrington said that in cases of breech presentation he had found it a very practicable method to get two good sized ropes, passing them under the stifle, crossing the ropes, which should be well covered with oleagenous matter; if this was done and traction exerted, the delivery was considerably assisted and the practitioner's work made easier.

Mr. Adams humourously prefaced his remarks by saying that the most difficult calving cases usually happened at night, or on a Sunday, or a hunting morning, or when one had a new suit of clothes on. Regarding monstrosities, after many years' country practice his experience was where there was no presentation of any limb, the best thing to do was to endeavour to remove it by traction. In breech presentations he found little difficulty, using an instrument shaped like a crutch with two prongs, which opened when pushed into the calf, and the calf could be pushed back as far as required, or so that the limb could be taken out. He agreed with all that Mr. McDowell had said.

Mr. Coleman thanked Mr. McDowell for his valuable and interesting practical paper, and quite approved of pulley blocks in scientific hands. He had found that in the majority of cases of monstrosities the cow died. In the case of a mare foaling, he had a case where pulley blocks had been used without effect for four hours. Upon making a close examination he discovered an enormous swelling. This proved to be a case of hydrocephalus. After an incision was made and the fluid allowed to escape and the cartilaginous mass broken down, the foal was delivered, and directly after delivery the mare commenced to feed as if nothing had happened.

Mr. McDowell, in replying, wished it to be understood that he did not apply pulley blocks in all cases. It was a matter for discretion, but he believed in their use very strongly, as when properly applied it was easier for the mother and for the calf. He only used them in cases of necessity, sometimes only once in six months, but the help was there if needed. His cases of calving sometimes numbered two or three a day.

Portable Lethal Apparatus for Dogs, Cats and other Small Animals.

By Henry Gray, M.R.C.V.S., Earl's Court, S.W.

As nearly every veterinary practitioner is called upon to destroy small animals as rapidly and painlessly as possible, he may do this most effectually with a very simple apparatus connected by a length of rubber or spiral iron tubing to a gas jet or tap.

The apparatus is composed of green Willesden canvas, or other impermeable material, narrowed down at one end to form a cone, into the apex of which is fixed a brass tap to receive the gas tubing. At the other end it should be wide enough to go behind the animal's ears where it can be tied firmly round

the neck, so that not much gas may escape. If the bag is long enough a small animal may be enclosed within it. When dilated the bag should have a diameter in accordance with the depth of the animal's head.

The subject should be held on the ground, on a table, between the knees, or in one's lap, and the gas turned on. Within two minutes the animal will be dead, without the production of any spasmodic reflex actions such as are so often seen in chloroform poisoning and always in poisoning by HCN.

Those who have not such an apparatus at hand or are not in possession of a rigid box lethal chamber need not despair, if they have any old tin canisters handy. They can make, in a minute, a hole at the bottom, through which they can pass a connecting piece of rubber (as sold by all gasfitters or ironmongers), so that it fits in firmly into the hole and receives the tubing running from the gas bracket or tap. The tin has to be held firmly on the face, or, if too large for that purpose, it should be pushed over the head and the open spaces between the tin and the head should be closed with a towel, rubber or any other occluding material to prevent too much gas escaping when the tap is turned on. A 7lb. Pascal canister does very well for a chow or other big dog; canisters with smaller diameters for little dogs, cats, etc. In the case of cats, the two hind legs should be held firmly with one hand and the two forelimbs with the other hand to prevent the operator, who should grasp the back of the head, being scratched.

I feel certain that after practitioners had practised this method of taking the life of innocent animals they would not revert to HCN, chloroform, morphine, etc., unless they found themselves in situations inconvenient for its employment. Certainly no humane practitioner would adopt the most diabolical method of taking life with strychnine, especially when humane methods are always at hand.

There cannot be any doubt as to coal gas poisoning being the most humane, the cheapest and the quickest method of taking life of animals.

Instrument makers are prepared to make aluminium cylinders with a tap at the bottom and an insufflating circular pad around the rim. When the rubber rim is deflated and removed, the cylinder may be used as an apparatus for the anæsthetisation of the smaller animals.

For more than thirty years I have used, almost daily, a similar apparatus for anæsthetisation of dogs, cats, monkeys, cockatoos, even goats, etc. It is the simplest, cleanest and most effectual apparatus; it can be sterilised, does not get out of order, may be applied without an assistant, and can be maintained for hours, requiring at intervals a renewal of chloroform.

Veterinary Surgeons Act Infringement.

DEFENDANT FINED.

On the 11th May, 1922, at Hendon Police Court, Mr. H. G. Cannon, of Kimbolton Lodge, Golders Green, was summoned by the Royal College of Veterinary Surgeons for an infringement of Section 17 of the Veterinary Surgeons Act, 1881. Sir Alfred Callaghan (instructed by Messrs. Geo. Thatcher and Son) appeared to prosecute on behalf of the College, and the defendant was represented by Mr. Hanhart, solicitor. Mr. Hanhart pleaded guilty on behalf of the defendant. Counsel for the prosecution said that defendant displayed at his premises, Kimbolton Lodge, notice boards with the words "Canine Vet." and "Canine Hospital," and he then quoted Section 17 and submitted that defendant brought himself within it; he was about to quote decided cases in support, but the magistrates considered it was not necessary. The chairman told the defendant he must remove all offending words, and defendant was fined £2 and £5 5s. 0d. costs.

Alleged Cruelty to a Dog.

Edward Sewell, of Thurloe Place, South Kensington, was fined £25 and £25 costs by Mr. Marshall at the South-Western Police Court on Saturday last, on a summons by the R.S.P.C.A., for cruelty to a dog "by subjecting it to an operation which was performed without due care or humanity." Notice of appeal was given. It was alleged that the defendant was under the influence of drink at the time, and that the dog, a bull terrier, was shockingly injured and died next day. The defendant, in evidence, said he had been removed from the register of veterinary surgeons for charging high fees. He emphatically denied that he was under the influence of drink or that his operation was unskilful. In his opinion the injuries referred to by the prosecution were inflicted after death. Another witness said that the defendant was a surgeon of great skill and experience.

Genital Infections in the Bull.

In the course of an exhaustive article upon this subject in the January number of the *Journal of the American Veterinary Medical Association* the author (Professor Gilman) says:—

"The study of the infections of the genital organs of the bull, and the associated structural changes, offers practically a virgin field for intensely interesting research work. Veterinarians and breeders have long recognised the bull as a potential factor in the spread of genital infections in the herd, but even then he was usually looked upon as merely a mechanical carrier of the organisms. The fact that he might be an active spreader has been quite generally overlooked. Too frequently the ability of a bull to copulate in an apparently normal manner is taken as conclusive evidence of his procreative powers. The question as to whether or not the semen contained normal active spermatozoa, and whether the genital organs harboured organisms capable of being transmitted to the female during ejaculation of the semen, seems to have been entirely disregarded until comparatively recently.

"It has been demonstrated by Carpenter (1) that the genital organs of cattle harbour several species of organisms, other than the Bang bacillus, which interfere with reproduction. The question is, Does the genital tract of the bull become infected with these same

organisms, and if so, are they eliminated with the semen, and is the female infected during copulation? Likewise, what gross and histological changes occur in his genitalia, and if so, what functional changes result therefrom? Clinical evidence clearly incriminates the bull in a large number of cases, and the clinical findings, substantiated by laboratory diagnoses, demonstrate that the bull often becomes a dangerous source of genital infections in the herd.

"The bull, when once infected is a much more dangerous spreader than the cow. . . . The cow may spread her infections merely to the bull or bulls with which she may copulate, while an infected bull naturally becomes a disseminator to as many females as he may be called upon to serve. It remains, therefore, for the veterinarian to consider the bull in the study of genital infections in every herd which he is called upon to treat. Comparatively too much attention has been given to the diseases of the cow, with practically no consideration of the source and mode of transmission of the infections.

"References to the part played by the bull in the spread of 'contagious abortion' as caused by the Bang bacillus are quite numerous. Bang (2) originally called attention to this fact, but came to no definite conclusions. Later, McFadyean and Stockman (3) attempted, but failed to infect cows by using a soiled bull for service. Hadley and Lothe (4) state: 'A large number of stockmen hold that the bull is an important factor in the transmission of contagious abortion in herds. A smaller number believe that the bull acts merely as a passive carrier of the abortion disease and is not merely concerned in the transmission.' Their attempts to infect abortion-free heifers with abortion-infected bulls were negative.

"Buck, Creech and Ladson (5) applied the agglutination test to 325 mature bulls, of which 288 were negative and 37 positive. *Bacillus abortus* was isolated from five animals, of which three showed marked lesions, two in the seminal vesicles and one in the left testicle. They conclude: '*B. abortus* may involve organs of the generative apparatus of bulls, producing chronic inflammatory changes. Of the generative organs, the seminal vesicles appear to furnish the most favourable site for the lodgment and propagation of abortion infection.'

"Schroeder and Cotton (6) cite the case of a bull which reacted to the abortion test, and on post-mortem *B. abortus* was isolated from an abscess of one epididymis. They state: 'Our attempts to produce a similar case of infection artificially failed; and, in agreement with the difficulties many investigators have had to obtain incriminating evidence against bulls, we have thus far failed to infect bulls in any way that justifies the assumption that they are important factors in the dissemination of abortion disease.' Further, they conclude: 'Regarding the dissemination of abortion disease by bulls we may say, however, that it would be foolhardy in the dim light of our present knowledge to take liberties with reacting bulls, or bulls from infected herds, or promiscuously used bulls.'

"The work so far discussed shows that *B. abortus* has occasionally been isolated from the genitalia of bulls, and that they do at times react to the agglutination and complement-fixation tests with *B. abortus* antigen. Attempts at artificial inoculation by natural channels have failed, with the possible exception of McFadyean, Sheather and Minett (7), who were able to infect the bull by the prepuce in two cases and by mouth in one case. The results, however, are by no means conclusive, and the duration of the infection and transmission to the cow are not discussed. They conclude, nevertheless, that cattle of any age and either sex may be infected by natural channels with the bacillus of epizootic abortion. Proof of the transmission of *B. abortus* by the male to the female has at no time been brought forward, and even the possibility of his acting as a mechanical carrier is merely assumed.

"Hadley (8) states that unquestionably the male often becomes infected with germs that produce the various secondary diseases in the female, which are more properly classed under the more inclusive term of 'abortion disease.' Further on he states that douching the bull before and after service certainly will keep the bull from transmitting the organisms that cause the secondary infections. One might infer from this that Hadley believes that the genitalia of the bull become infected with many varieties of organisms, and that they are transmitted to the female, producing disease in her reproductive canal. However, he does not state just what the secondary infections are. Even though the internal genitalia did become infected, and the organisms were eliminated during ejaculation, no amount of douching would prevent the transmission of the infections.

"The work so far reviewed has been limited to infection with and the transmission of *B. abortus*, with no attention to or regard for other infective agents which have been proven to be intimately associated with diseases interfering with reproduction in the female. While this organism is a very vital factor in the problem of genital infections, the organisms usually referred to as 'secondary invaders' are of primary importance, and must never be overlooked if one is to get a clear understanding of the problem. Their rôle is by no means insignificant.

"The semen, until the work of W.W.Williams (9), received only slight attention in the study of sterility in cattle. Its normal character has been simply taken for granted. In his work he calls attention to the importance of an examination of the semen in diagnosing sterility in the bull, giving methods for the collection of samples, staining, and some of the abnormalities encountered. The work is fundamental and should stimulate interest in this important method of diagnosis. Later he goes into a more extended discussion of the problem, concluding that the clinical examination is of vital importance. Of 40 bulls examined, he finds that 20, or 50 per cent., showed lessened fertility, and others aside from these showed minor changes in the genital organs or semen. W. L. Williams (10, 11) calls attention to the same fundamental problems, and in a subsequent paper (12) states: 'Clinical studies now indicate with great clearness that the bull is an active spreader of that group of genital infections which cause sterility, abortion and related phenomena.'

"Most of the present studies have been carried on in co-operation with the last two mentioned authors, in the hope of correlating the clinical and laboratory findings.

"In order to bring out the pathological changes encountered, some points in the anatomy, gross and histological, and physiology are briefly reviewed by the author.

"The pathological changes encountered are quite numerous, but merely the non-specific types are considered.

"The testicle seldom presents gross alterations of structure except for abscessation, which, according to Williams occurs more frequently in the bull than in any other domesticated animal. He also states that arrest in the development of the testes by which they remain soft, flaccid, and somewhat smaller than normal is not uncommon. The epididymis is occasionally the seat of necrotic processes as evidenced by swelling, tenderness and abscess formation. In two instances cases were encountered in which the head of the epididymis was much enlarged and firm, due to a chronic proliferative inflammation. On section the efferent ducts of the epididymis were much atrophied, the lining membrane was degenerated and desquamated, while the interstitial tissue was much increased in amount. Abscess formation may occur either here or at the tail of the epididymis, where it is more frequently encountered. Occasionally the ducts show slight desquamation and some degeneration of the lining epithelial cells, without any gross manifestations. Microscopically, the testicular tissue is the seat of pathological processes. Perhaps the most frequent condition encountered is desquamation and degeneration of the seminal epithelium. The process may be seen in various stages, from only slight exfoliation to almost complete disappearance of the essential semen-forming cells. In one instance total disappearance of the seminal tissue with marked thickening of the membrana propria was encountered, associated with an extensive increase of interstitial tissue. In every genital tract examined

(146) I have failed to find one in which there were not present many small strands of connective tissue between the tail of the epididymis and the adjacent part of the parietal layer of the tunica vaginalis. In some instances infection was present, while at other times the strands were evidently the result of some previous infection.

"The ductus deferens frequently shows degeneration and exfoliation of the lining membrane, and when this occurs it is usually associated with changes in either the testicle or seminal vesicles.

"In man the duct becomes occluded by a chronic inflammation, but so far I have failed to find evidence of this condition in the bull. Undoubtedly, however, this condition does occur occasionally.

"The seminal vesicles are perhaps the most common seat of infection and pathological changes. The acute form of inflammation is accompanied in some instances by enlargement either of one or both glands. On rectal palpation this may be quite easily distinguished, and pinching of the part causes a distinct flinching and evidence of pain.

"Together with the enlargement it becomes somewhat softer and flabby or even hard in the early stages. On microscopical examination there is usually extreme hyperæmia of the entire part, with varying degrees of desquamation and degeneration of the epithelium lining the vesicles. The normal clear mucous secretion becomes mixed with fibrin, leucocytes and cellular debris. In the more severe types the entire epithelium becomes desquamated and necrotic with more or less loss of definite structure in the gland. Cystic inflammation may occur, in which case the cysts may involve only one or two lobules or occasionally the entire gland. Abscess formation is not infrequent, in which case the entire gland becomes made up of small abscesses, or the entire gland may be one large necrotic encapsulated mass. Chronic inflammation is evidenced by a distinct enlargement and firmness of the gland. On microscopical examination most of the gland is composed of firm sclerotic tissue in which here and there one finds remains of the degenerating vesicles. This type may or may not be accompanied by adhesions to neighbouring parts. In one case encountered, the glands were much enlarged, sclerotic, and almost lost in a large mass of adhesions.

"The prostate and Cowper's glands no doubt are frequently involved in inflammatory processes. However, unfortunately, these glands were more or less neglected in the work, with the result that changes may have been present though not detected.

"The semen presents a most interesting and essential subject for routine examination and study. While the advances made so far have been more or less elementary, the work has demonstrated that its study is a very valuable aid in the diagnosis of infertility in the bull. Not only is the seminal fluid frequently the carrier of several varieties of bacteria associated with genital infections, but in a large percentage of cases the essential spermatozoa are abnormal either in their motility or morphology or both. Likewise the seminal fluid is subject to changes which are often detrimental or injurious to the existence of viable spermatozoa.

"It has been demonstrated that very frequently the bull harbours *streptococci*, *micrococci* and other organisms associated with genital infections in the female. These organisms become localised in the seminal vesicles and testicles, and during ejaculation of the semen are discharged and deposited in the vagina of the female. Bacteriological studies on the semen are not on the whole entirely satisfactory, but are sufficient, I believe, to demonstrate this fact. The method employed consisted in douching and disinfecting the vagina and sheath after the method suggested by Williams. Samples of vaginal mucus were then taken for study, following which the semen was removed after coitus. The vagina usually harbours organisms, though on smear but a few are ordinarily seen. In the bulls of high fertility the semen obtained by this method failed to show many organisms, most or all of which probably came from the vaginal mucus. The semen from many sterile bulls or those of low fertility, however, clearly showed that a large number of organisms must have been eliminated with the semen. Likewise the organisms isolated agreed culturally and morphologically with those found in diseased seminal vesicles and testicles. Perhaps some of these organisms were brought in by a penis contaminated by the exterior of the cow, but the number and type of organisms found would tend to make this source of contamination improbable.

"The seminal fluid, besides being frequently laden with bacteria, is in many cases abnormal. In one instance the fluid was quite thick, of a yellowish green colour, and of a distinct acid reaction. The secretion from the seminal vesicles was later found to be of this same character, and the glands had undergone diffuse abscess formation. The fluid may frequently contain pus, or rarely blood. Decrease in the amount of fluid, or a thin watery condition, is not infrequently encountered. In one instance the semen appeared in all ways like a thin, serous fluid.

"Distinct changes in the motility and morphology are, however, the main features to be looked for in the study of the semen. Not infrequently complete azoospermia is met with, however, with quite distinct changes in the character of the seminal fluid. In the examination of the motility the semen is best studied with the use of a warm stage, or if this is not available, a drop of the semen may be placed upon a warm slide. Motility may be observed with the aid of the low or high power lens, though often it is best to use a cover-glass and the oil immersion. Normal vigorous spermatozoa show a vigorous lasting motility which persists for hours or even days under proper conditions. Abnormalities of motion are manifested by sluggish motion of all or part of the cells present, abnormal types of motion, or, in many instances, entire absence of motion.

"Anatomical changes encountered were mostly confined to loss of the tail, and irregularities in staining of the nucleus. Some specimens show mostly headless sperms in the field, while others show but a few without tails. The irregularities in staining are manifested by unusual difficulty in obtaining a clear differential staining of the head. Abnormal forms such as spermatozoa with two heads, thickening of the connecting piece of the tail, diminutive size of the head, etc., are by no means uncommon. Their significance is not understood, but they are probably the product of some derangement in the seminal epithelium.

"The bacteriology of the male genital tract was studied upon the genitalia of 10 normal young (6 to 8 weeks) calves, 2 mature fertile bulls and 12 mature infertile bulls. Four aborted fœtuses and 5 calves dying from calf infections (scours and pneumonia) were also cultured, as well as 11 bulls slaughtered at an abattoir. In the latter group no history was available, as was the case in nearly all of the others.

"The seminal vesicles and testicles of the normal calves were sterile in all but two cases. From these two tracts a *staphylococcus* was isolated from one seminal vesicle of each. In one aborted fœtus a *streptococcus* was isolated from both the seminal vesicles and testicles, this same organism being obtained from the heart's blood. In another *Bacillus coli* was isolated from all parts, with a general colon septicæmia. *Micrococci* and *streptococci* were in several instances obtained from the seminal vesicles, testicles, or both, from this group of animals. In each instance the organisms were identical with those isolated from other parts of the fœtus or calf.

"Adult bulls of known fertility were naturally difficult to obtain, only two being available for examination. These were from the experimental herd kept by the department, and have always had an excellent breeding history. One bull had a severe attack of scours when a few weeks old, while the calf-hood history of the other is not known, he having been bought after sexual maturity. Cultures from the genital tract from the first-mentioned bull were entirely negative except for the presence of a *streptococcus* isolated from the left epididymis and left scrotal sac. All organs were normal except for numerous fine connective strands

running from the tail of the epididymis to the adjacent part of the parietal layer of the tunica vaginalis in both testes. The tract of the other failed to show any organisms. The only evidence of any abnormality was the presence of the same fine connective tissue strands as were in the other tract.

"In the mature sterile bulls, or those of low fertility, there was a comparatively wide variation in the type of organisms encountered, though the *streptococci* and *micrococci* were the most common invaders. The tail of the epididymis and the seminal vesicles are the most common seat of infection, the latter being infected in nearly all sterile bulls so far examined. One very interesting case noted was that of a bull with a history of suddenly becoming sterile. The semen was semi-fluid, greenish yellow in colour, and contained very few nonmotile spermatozoa. On post-mortem the vesicles had undergone abscess formation and contained the same greenish yellow material which had been discharged during copulation. *Streptococcus hemolyticus* and *Pseudomonas pyocyaneus* were isolated from both vesicles. In one bull a watery condition of the semen was found to be due to cystic degeneration of the vesicles.

"The tracts obtained from abattoir bulls were not always infected, but most of those examined bacteriologically demonstrated that the infection is quite widespread. Gross and histological changes of the seminal vesicles were by no means uncommon, as well as degeneration and desquamation of the seminal epithelium of the testes.

"*Micrococcus aureus* and *albus* were isolated in nearly all cases, though usually associated with *Streptococcus viridans* or *hemolyticus*. When checked up with the organisms found in the semen, the two appeared to be identical in every way. *Bacillus coli* was encountered but twice, and then in the vesicles.

"I have so far failed to obtain *Bacillus abortus* from any tract, either by direct culture or guinea-pig inoculation. The agglutination tests with *B. abortus* antigen were all negative except for two bulls from the abattoir. In three instances an organism was isolated from the seminal vesicles which agreed culturally and morphologically with *B. abortus*, but guinea-pig inoculation with the cultures of the organism failed to identify it as the Bang bacillus. Likewise an antigen made from the cultures were not agglutinated by positive abortion serum.

"Clinically, the diagnosis of sterility rests principally upon an examination of the semen, testicles and seminal vesicles. As stated before, in examining the semen one should note the reaction, quantity of sediment and character of the fluid. The spermatozoa should be examined for the relative number present and their motility, which may be vigorous, sluggish or absent. In staining one must look for poor staining of the head and for morphological abnormalities. The presence of bacteria, leucocytes or an unusual number of desquamated cells is to be noted. The testicles in each case should be examined for abscess formation, atrophy or any chronic enlargement, especially of the epididymis.

"The seminal vesicles in many cases will, on physical examination, be enlarged and firm, soft and flabby, or otherwise diseased. Abscess formation or cystic degeneration is not uncommon, and occasionally the glands cannot be palpitated, due to their being lost in a dense mass of adhesions to neighbouring structures. Sensitiveness on pressure is usually evidenced by a distinct flinching on the part of the animal. On the other hand, the vesicles may show no macroscopic evidence of inflammation, it being upon a microscopical section that the gland is found diseased. The spermatozoa will not live in a fluid not suited to their delicate requirements, and since the vesicles furnish most of the seminal fluid which is generally materially altered when the gland becomes infected, these glands should be given a careful examination. Abnormal semen may not be associated with diseased testes, but this is almost invariably the case with diseased seminal vesicles.

"While the work so far is but in its infancy, the results are such as to demonstrate that the bull often becomes infected and may be a dangerous source of infection in the herd. The semen is very frequently abnormal and contains bacteria which are similar to or identical with those isolated on *post-mortem* examination from diseased genitalia, especially the seminal vesicles. Likewise these organisms found in the semen are very frequently associated with a wide variety of genital infections in the female. Clinically, as stated by Williams (12): 'The cows served by one bull conceive in larger percentage than those served by another. Cows pregnant by a bull of low fertility abort in larger ratio than cows bred to bulls of high fertility. Those cows which are sterile after having been bred to bulls of low fertility often prove persistently sterile when bred to highly fertile bulls. In these cases not only has the bull ejaculated an infection fatal to the spermatozoa and ovum of the coitus concerned, but he has implanted in the genital tract of the cow an infection which prevents fertilization in the future by a fertile bull.'

"One valuable pure-bred animal coming to my attention had previously given birth to four normal healthy calves. She was then bred to a pedigree bull whose history was not looked into. Abortion took place at eight months, with death of the calf, and the cow barely recovered from a severe septic metritis. It would not be surprising to find that her breeding career was at an end.

"In one pure-bred bull attended by Dr. W. W. Williams, service to certain bulls was invariably followed by cervicitis, which later developed into salpingitis, leaving cow after cow hopelessly sterile. The semen and, as found later, the seminal vesicles of these bulls contained virulent *streptococci* and the seminal vesicles were badly diseased, as demonstrated by clinical and histological examination.

"The finding of the fine connective strands between the tail of the epididymis and the adjacent part of the parietal layer of the tunica vaginalis in every bull examined so far demonstrates the extent of the presence of some infection of the male genital tract at some time during life. The presence of organisms in the genital tracts of aborted fœtuses and of calves dying from some form of calf infection may signify that infection localises in the parts early in life, either to die out or lie dormant until sexual maturity, when it becomes intensified, especially by excessive sexual strain. The fact that the tracts from the healthy calves failed to show any bacteria, while those from diseased calves aborted fœtuses usually harboured bacteria, tends to the belief that bacteria are not normally found in the male genital tract. This appears to be so in the young, at any rate. Of the two adult bulls with a good breeding history, one showed no organisms, and the other infection of only one epididymis and scrotal sac. It is interesting to note that the bull harbouring the infection, which, by the way, was not discharged in the semen as far as I could find, had had the attack of scours while a calf. Both bulls, however, were used moderately and were douched before and after each service. The presence of the fibrous strands on the epididymis shows that infection had been present in both bulls. Hæmatogenous origin of the infection is always possible even in the adult. On the other hand, while there is no convincing evidence to support it, urethral infection from serving diseased cows is very probable."

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Sir A. Boscawen, Minister for Agriculture, replying to a question by Lieutenant-Colonel W. Guinness, said :—I have seen statements suggesting that the raising of the embargo on Canadian cattle would involve the repeal of the Diseases of Animals Acts, 1896. Such action would no doubt involve an amendment of the Act of 1896, but not necessarily its repeal, as it applies, and should continue to apply, to other foreign animals even if the Canadian cattle are exempt from its operation.

Mr. Hurd (Frome, C.U.).—Did not Mr. Hughes, the Prime Minister of Australia, intimate at the Imperial Conference that if Canada was exempted Australia also would claim exemption ? Sir A. Boscawen.—I think that is so.

R.S.I. Examination.

At an examination for Inspectors of Meat and other Foods held in London on April 28th and 29th, 1922, 33 candidates presented themselves.

The following 14 candidates were awarded certificates :—Frank William Blackmore (Horsham), Vincent C. G. Callen (Molesey), William Crandell (Wimbledon), C. Croker, Capt. R.A.S.C. (Devonport), Arthur Richard Kempton (S. Norwood), Bernard William Kilby (Deptford), Alexander John Henry Knight, Capt. R.A.S.C. (Glasgow), Arthur Male (London), Harry Archibald Pearce (Walthamstow), John Nelson Prior (Westerham), Victor Wynn Smith (Farnborough), Edward James Steeden (Leytonstone), Ernest Steele (London), and John Busby Stubbs, Capt. R.A.S.C. (Kensington).

E. White Wallis,
Deputy Registrar.

Improving Demand for Punches.

The report presented at the annual meeting of the Suffolk Horse Society stated the membership to be 760, compared with 702 in 1920 and 330 in 1915. Vol. 25 of the Stud Book shows a slight reduction in entries, but the total is an advance of 23 on the previous volume. At the three sales held by the Society last year 454 animals were sold, at a total of nearly £20,000.

It was stated that Mr. P. P. Stericker, secretary of the American Suffolk Horse Association, had reported that the outlook for the breed in the U.S.A. was improving, and when conditions became more normal he believed there would be quite a demand for Suffolk horses.

Sir Cuthbert Quilter declared that agriculturists, not only in Suffolk and the other eastern counties, but throughout the country, were learning that if they wanted a good horse on the farm there was no animal to beat the Suffolk Punch. Tractors, he said, had been tried and found wanting ; the Suffolk horse in no case had he been found wanting.

The Veterinary Record.

27th May, 1922.

THE ANNUAL GENERAL MEETING.

In a few weeks, August 1st to 4th, the most important function of the Association, the Annual General Meeting, will take place.

There is every reason to anticipate that this meeting will surpass its predecessors both as regards the attendance and the scope and importance of the numerous contributions to the various sections. In view of the endeavour which is being made to render this, our fortieth annual meeting, a record in every way, the officers confidently anticipate a record effort on the part of the members.

Bath is one of the most beautiful, as well as one of the most historical, of our cities, and will furnish an inexhaustible source of enjoyment, not only to those who have not hitherto partaken of its hospitality, but to those also who may already consider themselves well acquainted with its innumerable fascinations. There are already many indications that the presence of the members will be very welcome to the officials of the city, and the efforts which are being made to provide facilities for their entertainment are a compliment to the Association and to the profession.

Bath and its Interests.

Some Notes on this year's Conference City.
By John Hatton, Director of Baths, Bath.

" Sir," said Dr. Johnson, " do not waste your time in unprofitable sorrow, but come to Bath and endeavour to prolong your days." It was a famous American author who said, " You cannot anywhere get away from the beautiful in Bath." A great English writer, and an honoured resident of Bath to-day—Frederic Harrison—has written, " The peculiar charm of Bath lies in its great variety of gardens, parks, squares and promenades, together with the infinite change of street vista, alternating from rural picturesqueness to Palladian breadth of architectural schemes. . . . It surpasses all other English cities of any size."

" Like a Queen enchanted . . .
our fairest whose charm no rival nears,
Hailed as England's Florence . . . ,"

wrote Swinburne, and many another has joined in the pæan of praise. Bath's points of appeal are so many that a few notes on the city chosen for this year's conference of the National Veterinary Medical Association of Great Britain and Ireland may be

of interest and use to those members who are looking forward to a few days at Britain's historic spa.

In origin and name, in its fame and largely in its future, Bath is founded upon water. Little wonder, therefore, that letters of gold on the pediment of the Pump Room proclaim, in Greek characters, that "water is best." But it is no ordinary water upon which Bath has built up its reputation. Half-a-million gallons of health-giving water flow every day from the Hot Springs of Bath. Not only are the Bath waters the only natural hot springs in the British Isles—their temperature at the spring is 120° F.—but they are also the richest in radium emanation.

For 2,000 years the Hot Springs of Bath have been restoring health and strength to the sick and suffering. Roman officers left permanent record of their gratitude in votive altars to the goddess of the Springs, while the wonderfully preserved remains of the great Roman bathing establishment clearly show the importance attached to the hot springs in the first century. Down through the ages of our country's history the Bath waters have been doing their beneficent work. In the days of Queen Anne Bath had again become fashionable, and throughout the 18th century Royalty and Ministers of State, men of letters and the whole world of society, flocked to "the Bath" where ills of body and mind disappeared in the healing waters and the whirl of pleasure. But never in their long history have the Bath Springs done more valuable work than during the days of the Great War, when thousands of wounded and invalided sailors and soldiers of all ranks were treated with wonderful results.

Legend ascribes the discovery of the Hot Springs, over eight hundred years before the Christian era, to Bladud, a British Prince, who, being afflicted with leprosy, was driven from the court. Wandering into Somerset in great distress, he obtained charge of a herd of swine. The swine contracted the disease, but, attracted by the hot springs boiling up from the earth, day after day wallowed in the steaming morass, with the result that the leprosy entirely disappeared. Bladud, following their example, was likewise cured, and returned to his father's house, and eventually succeeded to the throne. In later years he returned to the scene of his wonderful cure, enclosed the springs, built palaces and temples, and founded his capital, the first "City of the Hot Springs."

The hot mineral waters of Bath attracted the health-loving Romans, who, about the year 54 A.D., erected magnificent thermæ and noble temples. For nearly four centuries the Roman City, then called Aquæ Sulis, was a great and important spa. After the withdrawal of the Romans from Britain the baths were allowed to lapse into ruin, although they were used by the Romano-British inhabitants until the city was destroyed by the Saxons in 577. For centuries these wonderful relics of antiquity remained buried, preserving for our own age one of the finest monuments of the Roman period in Europe.

The scientific application of natural remedies for the treatment of disease is of special interest to the members of the National Veterinary Medical Association, and those members who care to see the most completely equipped balneo-therapy institution in Britain will have every opportunity during the course of the meeting.

The bathing establishment consists of the Queen's Baths, the Royal Baths—opened in 1916 by Field-Marshal Viscount French, with its large new wing, an important addition opened in 1919 by the Minister of Health, Dr. Christopher Addison, and the Old Royal Baths, at present undergoing reconstruction.

The waters are administered internally in the historic 18th century Pump Room and, during the summer season, in the beautiful Institution Gardens, and externally by means of baths and douches of all kinds in the extensive bathing establishment. They are chiefly used in the treatment of gout and rheumatism in their many forms, sciatica, lumbago and neuritis, in certain skin diseases of gouty and rheumatic origin, and gouty laryngitis and chronic catarrh, and in mucous colitis. These, however, are only some of the many complaints treated successfully at Bath.

Amongst the many methods employed are the Deep and Reclining Baths, in which the patient is immersed in the natural hot mineral water and the particular joints and muscles affected are treated with under-current douches; douche-massage of various kinds in which douches of the mineral water are combined with massage and manipulations; whirlpool and aeration baths; intestinal lavage on the Plombiéres system; a special department for throat and nasal sprays and the inhalation of the natural gases of the springs; manyelectrical methods such as hot-air treatment, radiant heat and light baths, the hydro-electric and four-cell baths, in all of which electricity is combined with mineral water baths and douches; mud pack treatment and various forms of dry electricity such as ionisation and high frequency, and an extensive department for mechanc-therapy. The Electrical Department, opened only a few months ago, is an important addition to the equipment of the establishment, and very delicate and successful work is being carried out in this section. This by no means exhausts the list of balneo and electro-therapeutic methods employed, but serves to indicate the wide range of treatments available, and the very varied equipment of the great curative establishment.

One feature which would have been of special interest to veterinary surgeons unfortunately no longer exists. This was the Horse Bath in Southgate Street, or, as it was then called, Horse Street. In 1557 one, Dr. Turner, advocated a horse bath to be supplied with waste water from the mineral baths, and this was constructed a few years later. Dr. Turner's observations on the subject are of interest:—

"*Furthermore because Almighty God hath shapen and made herbes, stones, gumes, metalles and medecines*

of diverse other things principally for man, it is to be thought his will is the same should some tyme serve such creatures of his as man can not wel want. Wherefor as it is wel done the herbes and medecines made of diverse other things should be given unto the beastes that serve us so. I think it were not amisse if we made the bathes after they have served man, for whom they were principally made, serve also to help horses. For performing whereof I would wish one or two bathes in some convenient place might be drawen out from one or two of the hotest bathes and the wold I have so devised that the horses that have diseases of the legges and jointes might stand in the bath almoste unto the belly, and that other that have other diseases mighte stand higher in the water, whych thynge maye easelye be brought to passe, if that two holes be made wyth stopholes, the one higher and the other lower, that a man may set the horse as depe or shalowe as he lift the water increasinge or decreasynge accordinge to the holdinge in or lettinge out of the water.

I think verely that the bath of brimstone within the space of a month wil heale splentes, spavines, and all knobbes, hard lumpes and swellinges, if they be not verye olde, frettishinge or founderinge facies or fashones, and all such like disease, that are without, if the horses by the advise of a cunning horsleche have given them conveniente drinkes them before they come to the bath, and orden for them such emplasters ond pouders as are mete for them to use in the bathynge tyme, but whyle they stand restinge themselves oute of the bathe. And my advise is that they that have not muche money to bestow upon horsleches, that they laye in good quantite the slime and groundes of the bathe upon the sore places of the horses all the tyme that they are out of the bathe, restinge them in the stable betwene one bathynge tyme and an other. But I would not that anye man shoulde understande me here that I woulde not that the horse be exercised in theye bathyinge tyme, for that is not my meaninge, for I would that a horse should be as well exercised as a man, and so much more as he is stronger than a man, except the diseases be in his fete, and then they are more measurablye to be exercised."

Architecturally Bath is essentially a Georgian city—rather it may be called *the* Georgian city,—for nowhere can 18th century architecture and town planning be seen to such perfection. Its handsome streets and such magnificent buildings as the Royal Crescent, and the Circus, Queen Square, Pulteney Street and the Parades, to mention but a few, are a monument to the genius of the architects of the 18th century and the delight of every visitor of taste. The skilful architects who designed these stately edifices realised equally the natural beauties of the situation and the possibilities of Bath stone as a building material, and their work gives Bath to-day a unique charm comparable only to some of the cities of Italy.

Few cities are richer in literary associations. Here Henry Fielding founded the English novel, and Jane Austen drew her perfect pictures of the society of her day. Here Sheridan found the material for his finest comedies; here, too, he wooed and won Elizabeth Linley, "the Beauty of Bath." Here dwelt Oliver Goldsmith and Samuel Johnson, Fanny Burney, Southey, Shelley, De Quincey and Edmund Burke—the list might be long continued. It was to Bath that Nelson came after his expedition to Central America; it was from Bath that Wolfe went forth to conquer Quebec.

But Bath is not only an antiquarian treasure house, a literary shrine and a scientifically-administered modern health resort. In the provision of entertainment of the best kind this beautiful city will compare favourably with any spa in Britain. The Pump Room Concerts, established by Nash in 1704, were never more vigorous than at present, and dances, lectures, music-drama, symphony and chamber concerts, vocal and instrumental recitals, follow one another in rapid succession throughout the winter season. In the summer season the music is transferred to the open air, and one or other of the famous bands of the British Army may always be heard.

Of the shows and exhibitions held at Bath, of special interest to the veterinary medical profession is the famous old Bath and West of England Agricultural Show, which has its home in Bath and at intervals holds its exhibition here, naturally takes first place. At rare intervals, too, the Somerset Agricultural Society meets in Bath, but the Bath Horse Show, a very well-known event, is an annual fixture at the beginning of September. Three race meetings are now held annually on the Lansdown course, which during the past year or two has been immensely improved, and now ranks amongst the best-equipped courses. An excellent Dog Show is held every May by the Bath Canine Society, and the annual Fanciers' Show attracts some good exhibits.

Out-of-door sport is well provided for, and golf and tennis, bowls and boating, croquet and even archery find a place in the summer programme. The Beaufort Hunt is within easy distance.

Bath is a delightful motoring centre, as members of the Conference will have an opportunity of testing for themselves. Within an easy run is Wells, the gem of English Cathedrals, the west front a Te Deum in stone, and its moated Bishop's Palace. A few miles away in Tennyson's

". . . . island valley of Avilion,
Deep-meadowed, happy, fair, with orchard lawns,
And bowery hollows crown'd with summer sea,"

lie the ruins of Glastonbury Abbey with its memory of the Holy Grail, St. Joseph of Arimathea, King Arthur and St. Patrick. Bristol, only eleven miles away, with its great and varied industrial and commercial activities and its splendidly-equipped docks of Avonmouth, the Gateway of the West, worthily upholds the traditions of Cabot and his fellow Merchant Venturers, by building up a great shipping trade with Canada, America and Australia. The Gorge and Caves of Cheddar; the wind-swept, thyme-sweet downs of Salisbury Plain, and the great mysterious Temple of Stonehenge; Salisbury,

most graceful of English Cathedrals; Castle Combe, beloved of artists, and Savernake Forest are a few more of the many features of interest in the neighbourhood of Bath; but all around are old-world villages, breezy downs and combes of surpassing beauty, houses famous in the history of the past and all the charm and loveliness of the West Country.

Abstracts and Reviews.

A Study of Acaricides.

From this study, which was purely experimental, it has been observed that the acaricidal power of any drug examined is dependent upon fairly numerous conditions, and may vary in considerable propertions under the influence of these. It is necessary to differentiate between *apparent* and *real acaricidal power*. Often the parasite touched is only in a state of apparent death, from which it emerges as soon as it believes itself out of danger. The chief results are the following:—

Sulphur and the majority of its compounds have only feeble acaricidal power, and some products have none at all. This does not apply to sulphurous anhydride and carbon sulphide, both of which are efficacious and rapid.

Arsenious acid, reputed to be an acaricide, used in a warm saturated solution, shows its action upon acari only after twelve hours of contact. The same can be said of sodium arseniate.

Mercurial ointment has no action even after eighteen hours.

Pure *petrol* will kill acari in about ninety minutes. When it is mixed with water, oil, or other vehicles, it loses that action entirely. For this reason sulphopetrolated ointment, and the mixture of equal parts of petrol, oil and benzine used by army veterinarians, show very little and sometimes no acaricidal power at all, even after forty-four hours' contact with the parasites.

Benzine acts more rapidly, usually in about fifteen minutes. But, from the practical point of view, this efficacy cannot be utilised on account of the rapid evaporation of the drug.

Nitro-benzine acts upon the acari in five minutes. Its use appears to be more practicable than that of benzine—it is less volatile and less irritant.

Nitro-benzinated oil acts in thirty minutes, and nitro-benzoated vapours in ten minutes.

Xylol appears to be very active, but one must fully guard against all possibilities before advocating its use in practice.

Turpentine kills acari in twenty-five minutes, but its irritant action often contra-indicates its use.

Creosote, pure, is very active in two minutes.

Creosotated oil (10 per cent.) acts in fifteen minutes.

True oil of castor acts in twenty-five minutes.

Balsam of Peru acts in twenty minutes.

Storax has no action.

Cresyl appears to be acaricide of choice. Employed pure, it kills acari in two minutes. In a 2½ per cent. solution (aqueous) it acts in ten minutes. A solution warmed to 27° C. kills in five minutes. A solution at 37° C. kills in one minute. A 3 per cent. solution at 37° C. is as active as the pure drug at 17° C. Even a 1 per cent. solution at 37° C. is very active.

Cresylated oil only kills acari in twenty-five minutes.

[Abstracted for the *Jnl. Trop. Med. and Hygiene*, by Prof. Henry, from *La Semaine Vétérinaire*, 1921.]

Experiments in the Hereditary Transmission of Dourine.

The virus used produced an infection in mice within twenty-four hours after inoculation into the peritoneum, and death on the fourth or fifth days; in rats the inoculation period was the same, but death occurred between the fifth and eighth days. The results of all the methods tried, both in rats and mice, showed that the infection never passed from the mother to the fœtus, though the young of an infected mother were frequently stillborn. A further series of experiments undertaken to demonstrate whether, in rats and mice, the young of females infected with *Trypanosoma equiperdum* possessed any degree of immunity to the disease, showed that under no conditions did they acquire any power of resistance.

[Experiments in the Hereditary Transmission of Dourine (L. NATTAN LARRIER). *Bulletin de la Société de Pathologie Exotique*, No. 5, 1921, ex *Jnl. Trop. Med. and Hygiene.*]

Trypanosome Scourge.

Owing to the serious losses of stock from trypanosomiasis experienced by recent settlers, arrangements are being made for special investigation of tsetse-flies (*Glossina* spp.) in the Empangeni area of Zululand. The Union Government has agreed to support the plan suggested by the Imperial Government to have the bionomics of tsetse-flies studied on common lines by special entomologists stationed in suitable localities in six widely separated fly belts. It is proposed that the work of the various stations should be co-ordinated through the Imperial Bureau of Entomology, London, and each station should be kept informed of the progress made at the others. These investigations are expected to extend over five years. The Union Government has undertaken to carry out investigations according to this plan in Zululand at its sole expense, besides contributing annually to the common fund for general purposes.

TSETSE-FLY INVESTIGATION.—*Jl. Dept. Agric., Union S. Africa, Pretoria*, i, No. 9, December 1920, p. 799.

Diptera and Myiasis.

This popular article on Diptera causing myiasis in domestic animals describes cases due to *Hypoderma bovis*, De G., and *Gastrophilus equi*, F. It is said that the offspring of an Anglo-Irish stallion in the Roman Campagna sickened and died in winter owing to infestation by *G. equi*, whereas native horses remained immune. The latter have strongly developed skin muscles, the violent

contractions of which not only drive away the fly, but cause the larvæ and eggs to drop off.

[De Stefani (T.). Myiasis negli Animali domestici. (Myiasis in Domestic Animals.)—*Allevamenti, Palermo*, ii, No. 1, 15th January, 1921, pp. 18-19.]

Breeding experiments in connection with more than 120 cases of cutaneous myiasis in man and animals show that the fly concerned was *Chrysomyia bezziana*, Vill., a species that has so far only been recorded from Africa, where its larvæ have been found in the larger animals. In India there can be little doubt that it is the chief Calliphorine causing myiasis, and its larvæ occur in man as commonly as in animals.

The female fly lays its eggs on or in living tissues only, being attracted by foul discharges. A mass of eggs was found in one case on a piece of lint attached to an ulcer on the leg of a patient. The larvæ die if placed in the body of a recently dead or decomposing animal, in which situation those of most blowflies flourish. They burrow into the tissues, causing much destruction, and are secured from falling out by their many backwardly-directed spines. The adult flies have never been seen in nature.

This fly is a serious pest to man and animals in India.

Other larvæ that have been received from cases of cutaneous myiasis in animals are those of *Lucilia argyrocephala*, Macq. (*serenissima*, F.), *Chrysomyia dux*, Esch., *Aphiochæta xanthina*, Speis. (*ferrugínea*, Brun.), and *A. rufipes*, Mg.; the last two also attack man. The larvæ of *Philæmatomyia crassirostris*, Stein, and of *Sarcophaga* were received from a case of intestinal myiasis in man, and the latter also from two cases of cutaneous myiasis in man.

[Patton (W. S.). Cutaneous Myiasis in Man and Animals in India.—*Ind. Med. Gaz., Calcutta*, lv, No. 12, December, 1920, pp. 455-456.]

Insect War in the States.

Screw worms (*Cochliomyia macellaria*) are estimated to cause an annual loss of about £800,000 in the United States, and another heavy loss is due to wool-maggots of sheep. Remedial measures that are being tried consist of burning of carcases, trapping and poisoning of flies, modified range practices for prevention of attack, and the development of a satisfactory larvicide and repellent for use on wounds. A useful bait for blow-flies is gut slime, a product of meat-packing houses, and it has been found that this can be dried and concentrated for distribution. Other pests of animals dealt with are horseflies, ox warbles (*Hypoderma*), and poultry parasites, including a mite *Liponyssus sylviarum*, which has not previously been known as a poultry pest. A study has been made of insect carriers of hog cholera, the house-fly (*Musca domestica*) and stable-fly (*Stomoxys calcitrans*) both being implicated. Studies on the insects affecting the health of man were largely concerned with anti-Anopheline work, and with house-flies. Some experiments were carried out with substances for controlling insects breeding in human excreta; while these are not completed, great promise has been shown by potassium cyanide solution, sodium arsenate, and a pine-tar product acid.

[Howard (L. O.). Report of the Entomologist.—*U.S. Dept. Agric., Bur. Ent., Washington, D.C.*, 7th September, 1920, pp. 28-31.]

Fleas and Canine Infection.

In the intestines of various insects, and of fleas in particular, certain Protozoa of the herpetomonad and crithidial types have been observed. Their relationship to *Leishmania* is here considered. Though in some stages *Leishmania* presents morphological characteristics almost identical with *Herpetomonas*, it has been distinguished by the fact that *Herpetomonas* undergoes its complete developmental cycle (flagellate and non-flagellate) in the intestines of insects, while *Leishmania* completes its cycle in two hosts, one a vertebrate and the other an invertebrate. In the vertebrate host it produces a disease with characteristic symptoms—leishmaniasis.

Leishmania is non-flagellate in the vertebrate host and flagellate in the invertebrate (*Ctenocephalus canis*, *Pulex irritans*). Both forms occur in artificial cultures. Three stages (which may also be noticed in *Herpetomonas* and *Crithidia*) are found in the life-cycle of *Leishmania* in fleas—the pre-flagellate occurring in the flea's mid-gut, the flagellate in the hind-gut, and the post-flagellate in the rectum and fæces.

In *Leishmania*, as opposed to *Herpetomonas* and *Crithidia*, the flagellate form does not seem to be easily found. The post flagellate forms, expelled with the fæces, help to spread the species through infection *per os* of other fleas, and perhaps also of other insects. Probably, too, children or dogs might be infected in this way, as well as by inoculation. This would explain not only the widespread distribution of leishmaniasis in dogs, but also the domestic localisation of the disease, members of the same family becoming infected by fleas, which themselves infect one another by means of the fæces.

Experiments and observations of natural disease occurrence (*R. A. E.*, B, i, 130; iv, 102; etc.) show that in mammals, as in reptiles, fishes and amphibia (especially in those that are insectivorous), natural herpetomoniases exist, or an infection with an insectan *Herpetomonas* may be induced, either by way of the digestive tract or by inoculation. Herpetomoniasis appears to be an infection that is not distinguishable, either by the morphological and, biological characteristics of the parasite or by its symptoms, from visceral leishmaniasis. The author consequently reaffirms his belief that the leishmaniases are produced by Protozoa (*Herpetomonas*, and perhaps also *Crithidia*) that have adapted themselves to live and multiply in vertebrate hosts; this adaptation is easier in the case of a vertebrate on which the insect hosts are ectoparasitic.

The same species of *Herpetomonas* of insects, under different conditions, may not have any pathogenic action, or may produce pathogenic effects in various degrees in different animal hosts. In Mediterranean leishmaniasis this theory explains the acute forms, the chronic forms, and other spontaneously curable forms that have been distinguished. The disease, and particularly slight cases of it, may be much more frequent than has yet been realised.

The study of visceral leishmaniasis in the Mediterranean regions, the epidemiological factors of the close relations between leishmaniasis in children and in dogs, and the close relations of contact between children and dogs affected with leishmaniasis and fleas affected with parasitic protozoa are indistinguishable, for *leishmania* tend to prove that visceral leishmaniasis of the Mediterranean is produced by a species of *Herpetomonas* of *Pulex irritans* and *Nenocephalus canis* that has adapted itself to live in children and dogs, themselves having habitual hosts of these fleas.

[Basile (C.). Leishmania, Herpetomonas, and Crithidia in Fleas.—*Parasitology, Cambridge*, xii, No. 4, December, 1920, pp. 366-377].

Clinical and Case Reports.

The Editor will be glad to receive from members and others contributions to this column of reports of interesting cases

A Peculiar Case.

By Hamilton Kirk, M.R.C.V.S., Wigmore St., W.

About the beginning of March I was called to treat a Pekingese dog, aged two years, which the owner said was off its food and inclined to be snappy. Very little reliable history could be ascertained, but by examination of the dog I found the abdominal muscles were abnormally tense, and palpation in the region of the abdomen evidently caused some pain or apprehension. I assumed at this early stage that the animal was constipated and merely needed a purgative, as the temperature and other conditions appeared to be normal. Castor oil was given and had a good effect, for in two or three days' time normal health had apparently been regained. This dog was a very great pet; in fact, a veritable canine aristocrat, and as is usual in such cases, was often the victim of an irregular and ill-chosen dietary, living in the greatest luxury upon the fat of the land.

On April 24th I was again called by telegram, and found the dog lying very still, breathing uneasily, the pulse feeble and rapid, temperature 101°, abdominal muscles exceedingly tense, the animal constipated, and paresis in evidence. Palpation of the abdominal contents was impossible, owing to the iron-like tensity of the muscles, and in view of the previous attack, and the fact that it was thought the dog had some time previously swallowed a bone, I advised an X-ray exposure. This was agreed to and carried out the same afternoon, the positive revealing a dark area about the size of a split pea, surrounded by a narrow white ring. This was situated in the centre of the abdominal cavity, and in the opinion of the X-ray specialist was an intestinal foreign body of the nature of a washer, a perforated button, a piece of hollow bone viewed end-on, or a fibrous ring around the intestine. Upon arrival at my surgery the same evening the little animal was extremely bad, had a gasping respiration, the pulse 160, and almost imperceptible. I gave an immediate dose of chloretone in liquid paraffin to relieve pain and facilitate the exit of the alleged foreign body. Then I injected 1 gr. morphia, and in about half-an-hour the whole body was so flaccid that I could thoroughly palpate every part of the abdomen; but I failed to detect any abnormal body, and in view of the absence of temperature, vomition, or gaseous distension, I decided that if, in fact, a foreign body *was* present, it had not as yet set up enteritis or obstruction, and it was deemed inadvisable to operate. The dog was returned to owner, and slept soundly.

Next morning, *April 25th*, called to attend patient at *4-45 a.m.*, the owner being distressed because the dog had never awakened to take any medicine, the latter at this stage being chloretone and paraffin. The temperature was 100·5; pulse 140 and slightly stronger; respiration almost normal; abdomen still flaccid, and dog peacefully sleeping. No stools had been passed for three days. Awakened dog and gave 1 oz. liquid paraffin. Paraplegia was marked. *9 a.m.*—Left a bottle containing paraffin ℥iss., chlorodyne ♏xxx., salol gr. xxv. (dissolved in æther ℥i), syr. rhamni ad ℥ii.; dose ℥ii. every three hours. *1-30 p.m.*—Still drowsy, but comfortable. Nothing evacuated yet. *7-30 p.m.*—Paraffin, combined with a dark brown and very offensive liquid, had made an appearance at the anus, thus negativing the idea of complete obstruction. Rectum greatly congested; temperature normal.

April 26th, 9-30 a.m.—Spasms of pain evident; dog very uneasy; sometimes breathing rapidly, with tongue hanging out; noticeable loss of flesh along back. The food which had been ordered all along was a choice of milk and egg, Brand's essence, or plain milk, with barley water to drink. Pulse was weak and erratic, and I left a new bottle of mixture, containing Tr. digitalis and Mist. bismuthi Co. *4-30 p.m.*—Small evacuation from rectum of brown oily fluid of very unpleasant odour. *8-0 p.m.*—Gave gr. ss. morphine; hind limbs absolutely useless.

April 27th, 9-30 a.m.—Very ill indeed and seemingly in great pain. Gave dose of aspirin, which later seemed to have afforded some relief. *5-30 p.m.*—Opisthotonos evident; gasping respiration; imperceptible pulse; temperature 99°. Fearing that death might ensue from pain and exhaustion, I gave a further ¼ gr. of morphia; medicines per os now extremely difficult to give. The owner was advised that the dog would probably die, an announcement which was received with incredulity. In consequence of the owner's excitable and erratic methods with the dog, and the difficulty of treating disease in a private house, I urged, as the last remaining hope, that the dog be permitted to come to my surgery. *7-0 p.m.*—Dog admitted, almost dead. Immediately gave 1½ pts. warm saline solution per rectum and aspirin in capsule. Enema afforded relief and composure.

April 28th.—Commenced giving chloretone in capsule twice daily, combined sometimes with digitalis; saline clysters continued twice daily with gratifying results. Small gritty pieces of fæces brought away each time, and always having a very fœtid odour. Occasionally larger pieces passed,

having consistence of old putty. Greater comfort was always observed after the clysters, and sleep often induced.

Diagnosis.—I had come to the early conclusion that this was a case of obstinate constipation, which—as so frequently happens in dogs—was the forerunner of paraplegia. On account of the feeble rapid pulse and other features of collapse, I also soon formed the opinion that an auto-intoxication had taken or was taking place; the dog having passed nothing for many days, absorbing its own poisons, which otherwise would have been eliminated by the bowels. I came altogether to disregard the importance of the supposed foreign body, and treated the dog on my own diagnosis.

April 29th.—a.m., pulse 156 (feeble); respiration, 84; temperature, 102°; p.m., pulse 160 (imperceptible); respiration, 52; temperature, 100·2°.

April 30th.—a.m., pulse 168; respiration 56; temperature, 100·5°; p.m., pulse 156; respiration 56; temperature 98·6°. At this stage, owing to the decreasing temperature, decided to do what I had not before dared, that is—give a purgative. But it was impossible to make this dog swallow anything which it could taste, as it immediately produced a mouthful of slimy froth, which ran out at each side of the mouth, taking any liquid or pill with it. So I gave two large gelatine capsules, containing Ol. ricini (℥ii.), which the dog was obliged to swallow whole.

The evening enema brought away a string of hard fæcal pellets—like those of a rabbit—which, however, had by this time lost their offensive odour, in consequence doubtless of the frequent lavage and the intestinal antiseptics prescribed.

May 1st.—Loose evacuations during night; enema later brought away soft brown fæces, coated with specks of mucous membrane, like curdled milk. Dyspnœa marked; pulse 148; respiration 72; temperature 100·5°.

May 2nd.—Dog very hysterical, uneasy, and preferred to sit up supported by its two fore-legs widely apart; tongue out and mouth perpetually open; loss of balance noticeable and cyanosis observed in the tongue. Opisthotonos sometimes seen; at others head bent round to side like that of a cow with milk fever. Morning temperature, 96·5°.

I repeated to the owner a former request that a second opinion should be sought while there was yet time. This was agreed, and I called in Professor Wooldridge, who, after careful examination, gave his opinion that meningitis was then present as a complication. He advised that salol (grs. iv.) should be continued, combined with pot. brom. (grs. x.) in capsule t.i.d.; the hair to be removed from the spine and counter-irritants applied; enemata to be continued, and sub-cutaneous injections of æth. meth. given twice daily whilst indicated.

I had been obliged to feed per rectum with suppositories, but upon Professor Wooldridge's advice I now commenced feeding them per os. Milk with brandy was administered whenever the dog seemed thirsty. Hot water bottles were in constant use, and an attendant administered to the patient's wants during each night.

May 3rd.—About 11-30 a.m. obliged to inject morphia to stop the incessant hysterical barking. Half a grain was given; twenty minutes later I was sounding the heart, when I noticed Cheyne-Stokes respiration, could detect absolutely no pulse, and realised the dog was at the point of death. Artificial respiration was immediately resorted to and continued for 2¼ hours, during which ammon. carb. was placed near the nostrils, strychnine given subcutaneously, and a warm saline enema administered by my assistant. Twice during that period I placed mj. of Scheele's prussic acid on the back of the tongue, and indulged in vigorous stimulation of skin and limbs. Eventually, at 2 p.m., I found I could desist, the dog having resumed its normal respiration.

May 4th.—At 10 a.m. respiration was 72, pulse 174, and temperature 105·2°—the first noticeable increase—and upon withdrawing the thermometer, found it coated with blood. The animal died about 12 o'clock, whilst I was out purchasing pituitrin.

Post-mortem revealed recent gastric hæmorrhage around the pylorus, two or three isolated patches of inflammation in the large bowel and rectum, a slightly congested brain—or one which appeared to me to be of a rather deeper pink than usual. The spinal cord appeared normal, but a transverse process of the last lumbar vertebræ was of a distinctly blue colour. No foreign body was found in the alimentary tract. I fear I have presumed upon your valuable space with unusual detail, but for the specific reason that I wish to probe to the bottom of this peculiar case, if possible, and I invite any practitioner to give me the benefit of his opinion as concerns the ætiology and diagnosis, which he could not do without full particulars.

Rupture of the Womb in a Mare.

By H. O. Richard, M.R.C.V.S., Corwen.

On Monday evening, the 24th ult., I was called to attend a griped colt, and after seeing to him, I was requested to examine an aged cart mare (10 to 12 years) due to foal on the 30th ult.

History.—About three weeks previously she presented the signs of an early foaling, but they disappeared. She was noticed to be dull, off her feed, slight hæmorrhage through the vulva took place, and she had a tucked up appearance at the flanks.

Symptoms.—On examination *per vaginam* I found the os partly dilated, allowing my hand to pass through easily. It was very flabby, and in the womb I could feel something which was not the fœtal membranes. In a short time a large portion of the double colon came out, and of course the mare died very soon.

I may say here that all the farm hands were satisfied that she had not cast her foal prematurely, as she had not been out of sight. I gave my opinion to

the owner that she had a ruptured womb, and that the fœtus had slipped into the abdomen.

Post-mortem.—Being at the farm again next morning, I made a *post-mortem* examination, and found the fœtus intact in the membranes, lying on the floor of the abdomen as far forward as possible, and the large colon entering the womb through a large rent, 15 to 18 inches long. The womb itself was very flabby and the lining membrane a greyish colour.

Association Reports.

Mid-West and South Wales Veterinary Association.

Successful Second Year.

The Annual General Meeting of the above Association was held on Thursday, April 20th, 1922, at the Pathological Laboratory, Bristol University, Queen's Road, Clifton, by the very kind permission of Professor Walker Hall.

The President, Mr. W. M. Scott, was in the chair, and the following members present :—

Messrs. J. L. Perry, Cardiff; E. Bishop, Bristol; C. Armstrong, Bristol; C. E. Perry, Bristol; A. O. M. McDowell, Gloucester; W. Webster, Warminster; C. H. Delacherois, Sandford; J. R. Baxter, Lechlade; J. W. H. Masheter, Newnham; W. D. Jordan, Glais, Swansea; A. Brassnett, Wells; S. B. Clode, Pontypridd; R. Moore, Treorchy; T. J. Brain, Cheltenham; J. Golledge, Trowbridge; W. S. Stevens, Wincanton; F. L. Haydon, Midsomer Norton; J. C. Coleman, Swindon; A. Veitch, Weston-super-Mare; W. D. Rees, Trealaw; A. Macadam, Bristol; G. E. Henson, Bristol; F. J. Taylor, Bath; A. S. Adams, Dursley; Edwin Sayer, Mumbles; R. Porch, Bristol; W. R. Watson, Thornbury; S. Codrington, Chipping Sodbury; and J. J. Aveston, Bath (Hon. Secretary).

The President: Gentlemen, the first item on the agenda is to read the minutes of the last general meeting, and I take it that you will agree to take these as read as they have already been published. This was duly proposed, seconded, and on being put to the meeting, carried unanimously.

Annual Report.

The Secretary (Mr. J. J. Aveston) read the annual report, as follows :—

Mr. President and Gentlemen,—Your Council is happy again to be able to state that our second year has been one of continued success, finding us in every way stronger than we were a year ago.

We now have ninety-seven members on the register, six new members having been elected during the past year; also six very distinguished men have been elected as honorary members, namely: Sir Clifford Allbutt, Sir Isambard Owen, Sir Almroth Wright, Sir Layton J. Blenkinsop, Dr. Savage, and Major F. Hobday.

It is undoubtedly a considerable honour to our Association to be able to count these gentlemen as honorary members, men whose names are well-known throughout the British Empire. What a rare pleasure it would be if it were possible for us to entertain these, our illustrious honorary members, and what an intellectual treat to those who were able to be present at such a gathering. This, gentlemen, is the credit side as regards our members, but, alas, we have a heavy debit side also.

There has been one resignation, Mr. R. T. Davis, Knighton, which we much regret.

Providence has seen fit to take from among us four of our most respected and esteemed members, namely: Mr. Cade, Mr. Hindle, Mr. J. M. Stewart, and Mr. W. A. Welch.

Mr. Cade and Mr. Welch were two of the eight veterinary surgeons who assembled at Bristol on 6th February, 1920, and discussed the advisability of forming a veterinary association in the West of England; both had been members of Council, and Mr. Welch one of our first vice-presidents. Mr. Stewart also had been a member of our Council. Mr. Hindle was a regular attendant at our meetings when his health permitted, and not long ago paid his subscription for 1921-22 and 1922-23.

This, gentlemen, is indeed a sad blow to our Association—one cannot lose such keen members of ripe experience and mature judgment without feeling their loss severely; it means that others will have to take on the work previously carried on by our lamented confrères. Our last annual meeting was considerably interfered with by the industrial crisis prevailing at that time. After a postponement it was held on May 25th, the dinner being cancelled. Major E. Henson read a most interesting paper on "Clinical and other Experiences during the War;" a good discussion followed.

Three quarterly meetings, in addition to the annual meeting, have been held; on September 9th, 1921, at Bridgwater, where the Association was entertained at a garden party by its President, which was much enjoyed, and an excellent paper was read by Dr. Savage, M.O.H., Somerset, on "Bacteriological Food Poisoning"; on November 4th, 1921, at Cardiff, when Major Hobday gave two surgical demonstrations, rig operation and tibial neurectomy, and read a paper on "Whole-time Salaries," which caused considerable interest to the whole profession; and at Bath, on January 12th, 1922, when Mr. R. W. Hall read a paper on "Mastitis in the Cow," a most practical and interesting discussion following.

To these gentlemen the Association offers its most sincere thanks for the trouble they took in bringing before us such excellent papers.

There have been four Council meetings during the year, and much useful work has been done.

There was an average attendance at the ordinary meetings of 32. Knowing what a very large area the Association covers, this fact is of the greatest encouragement to the officers and council of the Association, and

is at least some reward to those who make the meetings so interesting by reading the papers. It will be difficult to maintain this high standard during the ensuing year, but with the general assistance of the members it can be accomplished, but not without united effort.

The Balance Sheet which is before you shows receipts of £74 17s. 0d., and expenses of £49 1s. 6d., leaving a balance on the year's working of £25 15s. 6d., and with £72 15s. 8d. carried forward, leaving a total balance at bank of £98 11s. 2d.

In conclusion, the Council again begs to thank the many members who have done so much to make the Association the success it has been during the past year, and it is hoped they will not relax those efforts.

There are many members who still have never attended a meeting; let them feel assured a sincere welcome awaits them when they make their first attendance at any of the Association's gatherings.

The report was received with applause.

The PRESIDENT: I am sure you will agree with me that the excellent manner in which Mr. Aveston has brought forward this report is very encouraging to us as an Association. No small debt is due to him for carrying out his duties in such an efficient manner.

BALANCE SHEET, APRIL, 1921-22.

RECEIPTS.

	£	s.	d.
Balance brought forward	72	15	8
Entrance Fees	14	14	0
Subscriptions for current year, 53 members	27	16	6
Subscriptions, past and ensuing years, etc.	9	1	6
Per Mr. Adams	23	5	0
	£147	12	8
Balance brought forward	£98	11	2

PAYMENTS.

	£	s.	d.
Hire of Rooms, Council and Quarterly Meetings	4	17	6
Stamps and Postage	8	3	0
Printing and Stationery	5	10	0
Typewriting	2	2	6
Reporter	3	3	0
Wreaths for Mr. Cade and Mr. Welch, deceased	3	0	0
Advertisement in *Veterinary News* ...	1	6	0
Annual Subscription to National Veterinary Association, 75 Members	3	15	0
Mr. W. M. Scott, Bridgwater Meeting other expenses	8	10	6
Mr. J. L. Parry, expenses Cardiff meeting	8	10	0
Bank for Cheques	0	4	0
Balance at Bank, carried forward... ...	98	11	2
	£147	12	8

The SECRETARY presented the balance sheet. In presenting this statement Mr. Aveston drew the members' attention to several items appearing therein. He suggested the formation of a benevolent fund to be kept separate from the Association's general banking account, which might be used for the assistance of necessitous cases.

The PRESIDENT: Gentlemen, I think that Mr. Adams wishes to bring something to your notice in connection with this very generous sum (£23 5s.) which he has seen fit to place at the disposal of the Association.

Mr. ADAMS: Well, Mr. Chairman, there are certain sums already paid, and some forthcoming money which will be in during the next fortnight, all told £50, and I think it would be a splendid thing to form a benevolent fund separate from the Association's funds, how and when we can, to be held in this Association, and to be dispensed as and when we think fit. That sum will be £50 within the next few weeks, and from the interest taken in this matter by many of the members, the benevolent fund should soon have £100 at its disposal.

The PRESIDENT: I am sure we are all deeply grateful for such a generous offer, and I think someone should make a proposition in connection with this fund.

It was then proposed by Mr. ADAMS and seconded by Mr. REES: "That the sum of £50 shall be set aside for some benevolent purpose as occasion shall arise in the future."

This was put to the meeting by the CHAIRMAN and carried unanimously.

A vote of thanks to Mr. Adams for his generosity was proposed by Mr. REES. This was seconded by Mr. MOORE and supported from the chair; on being put to the meeting the vote was carried with acclamation.

Mr. ADAMS suitably responded, expressing his pleasure in doing all in his power for the benefit of the Association.

ELECTION OF OFFICERS.

The President for the current year, Mr. Rees, was proposed by Mr. E. SAYER, and seconded by Mr. R. PORCH, who said that the Association would have a worthy successor to the one they were now losing. This, on being put to the meeting, was carried unanimously.

Mr. SCOTT: Gentlemen, as the retiring president of this young and vigorous Association, I desire to thank you most heartily for the generous way in which you have supported me during my two years of office. When I was first elected to the presidential chair, I little dreamt I should have such support and encouragement, but you in the largeness of your hearts have overlooked all sins of omission and commission on my part, and I have had nothing but encouragement from you in every shape and form. I am sure you will extend to my successor the same kindly assistance and not only will he merit your co-operation and support, but that he will leave his official position, as I am leaving mine, with a very grateful heart towards you one and all.

When one considers that this Association covers a very large area and we find a record at each quarterly meeting of something like 30 to 40 members attending, and that at our Council meetings we have never had

less than 10 out of 16 members (I venture to think that some of the Veterinary Associations of this country do not get at their ordinary meetings more than that latter number), no president could wish for more loyal support. Show your appreciation of your president by eclipsing those numbers in the future. Gentlemen, I again thank you for your extreme kindness during my two years of office.

Mr. J. J. AVESTON moved a hearty vote of thanks to the retiring president in the following terms: "We could never have a finer president, and the Association could never have a better friend, than Mr. Scott, who has spared neither time nor expense to make our Association the success it is; and as long as this Association is successful and flourishing, so long must Mr. Scott's memory remain green."

Mr. PORCH, in seconding, mentioned that he was one of the original founders, and that the Association could not have a president who would do more than Mr. Scott had done. It was through him (Mr. Scott) that the Association was formed; he was the originator of the Association; had there been no Mr. Scott, there would have been no Mid-West until Mr. Scott took it in hand.

The resolution, on being put to the meeting was carried with acclamation.

Mr. SCOTT, replying, said that what he had done had been a great encouragement and pleasure and thanked the members for their vote.

Mr. REES then took the chair, saying: "Gentlemen, permit me to express my recognition of the honour you have done me by electing me as your president. It is very difficult for me to follow in the footsteps of our late president, and if I have not Mr. Scott's ability, I hope at the end of my year of office I shall have done something to further the interests of the Association."

The PRESIDENT then proposed the re-election of Mr. Aveston as hon. secretary and treasurer; he had promised to carry on for another year at the last Council meeting, and on behalf of the Association he (Mr. Rees) thanked him for all the work he had so ably done and especially for the real and never-failing interest he always took in the Association's affairs.

Mr. ADAMS, in seconding Mr. Aveston's re-election, remarked that he was the right man in the right place, and there he must remain. This was carried unanimously.

Mr. AVESTON suitably responded, saying that he was most anxious for every member to take an interest in the conduct of the Association and to feel that he was personally responsible for the way it was being carried on; then he had no doubts about its future success, especially if the good feeling that existed between its members continued. He desired to thank Mr. C. E. Perry for the great assistance he had given him during the past year, for if ever he needed either help or advice, Mr. Perry was always ready and willing to give it, and he thanked him on the Association's and his own behalf.

The vice-presidents for the year, elected by the meeting were Messrs. W. M. Scott, C. E. Perry, S. Codrington, and W. R. Watson.

The following fourteen gentlemen were respectively proposed, seconded, and elected to form the Council for the ensuing year. Messrs. R. Moore, C. E. Perry, S. Codrington, A. S. Adams, Major Taylor, E. Sayer, A. Veitch, W. M. Scott, R. Porch, J. R. Baxter, J. C. Coleman, A. McDowell, J. L. Perry, and W. R. Watson.

Messrs. Scott, Sayer and Rees were re-elected as members to represent the Association on the National Council.

New Members.—Mr. Carter Armstrong, of Bristol, proposed by Mr. Bishop, seconded by Mr. Perry; Captain Boyle (Ministry of Agriculture), proposed by Mr. Scott, seconded by Mr. Haydon; Major Still, proposed by Mr. Watson, seconded by Major Taylor.

Mr. W. M. SCOTT, in proposing the election of Professor Walker Hall as an honorary member of the Association said that he held a unique position as a pathologist, and his reputation was of the highest. Some of the leading London pathologists consulted him on highly technical questions. They were conferring upon him an honour, and by accepting it he would be conferring an honour upon the Association.

This was seconded by Mr. AVESTON, strongly supported from the chair, and on being put was carried unanimously.

Mr. A. S. ADAMS proposed that a donation of £5 from the funds of the Association be sent to the National Veterinary Benevolent and Mutual Defence Association. This was seconded by Mr. R. MOORE and carried unanimously.

The SECRETARY read the corrspondence which had passed between him and the Secretary of the N.V.M.A. After some little discussion, Mr. A. S. ADAMS proposed:

> "That the members of the Mid-West and South Wales Veterinary Association consider the October meeting of the Council of the N.V.M.A. was of an irregular character, in that the representatives of this Association on that body did not receive any notice of the meeting, and that this Association does not agree with the decision arrived at, whereby the N.V.M.A. compromised their liability in a threatened libel suit by a breach of confidence. Also that where the notice was received the agenda did not convey the serious importance of the business of the meeting, in that a threatened libel suit was not specified thereon, and that a copy of this resolution be sent to the N.V.M.A."

On being put to the meeting, this was carried.

A very interesting paper was then read by Mr. A. McDowell, M.R.C.V.S., on "Parturition in the Domesticated Animals." (Mr. McDowell's paper receives separate publication.—ED.).

The PRESIDENT moved a very hearty vote of thanks to Mr. McDowell for coming forward with such a practical paper, and was sure that all would join in thanking him for it. The motion was seconded, and carried with applause, as was a further motion, that the thanks of the meeting should be conveyed to Professor Walker Hall for so kindly placing the laboratory at their disposal.

This concluded the meeting, and the members adjourned to the Royal Hotel for tea, at the invitation of the President.

J. J. AVESTON, *Hon. Secretary.*

Dumfries and Galloway Veterinary Medical Association.

A meeting of the above Association was held at Dumfries on the 26th October, 1921, when there were present:—Mr. Edgar (President) in the chair, Mr. Lindsay (Vice-President), Messrs. Young, Baird, Lawson, Littler, Milligan, McKenzie, Waddell, Pollock, Wishart, and Macalister, Secretary.

The members first met at Harrison's Auction Mart, where Professor D. Imrie, Glasgow, assisted by Mr. William Forbes, Kilmarnock, demonstrated. The first operation performed by Professor IMRIE was median neurectomy in the standing position. This operation was performed in the Professor's usual able manner. The next operation by the Professor was the flank operation for cryptorchidism. The animal, a four-year-old, was chloroformed standing, and went down without a hitch. This difficult and delicate operation greatly interested the members present, and impressed them with the possibility of abdominal surgery. Professor Imrie was heartily congratulated on his successful efforts.

Mr. EDGAR then chloroformed a bull stirk, which proved a most interesting and successful demonstration.

Mr. WADDELL operated on two bull stirks with the Burdizzi castrator.

The members then adjourned to the Station Hotel for lunch.

Following this, the annual meeting was held.

The minutes were read and adopted.

The motion by Mr. LINDSAY that instruments be purchased for the use of members was passed—tooth instruments to be purchased.

The auditor's report was read and adopted.

Mr. EDGAR proposed Mr. Lindsay, Dumfries, as President of the Association. Mr. MILLIGAN seconded. Agreed.

Mr. EDGAR proposed Professor Imrie as an honorary member. Seconded by Mr. POLLOCK. This was agreed to.

Professor Imrie and Mr. Forbes were thanked for their kind help to the Association.

Mr. YOUNG's election was confirmed.

Mr. EDGAR proposed Mr. Wishart, Lockerbie, as a member. This was seconded by Mr. LINDSAY.

The Secretary was instructed to communicate with other Societies and find out their opinion as regards representation to the Royal College of Veterinary Surgeons. The President and Secretary and Mr. Edgar were elected as delegates to the National Veterinary Medical Association of Great Britain and Ireland.

The PRESIDENT then thanked Mr. Pollock for an able paper. Messrs. Edgar and Wallace were also accorded thanks.

Mr. WALLACE agreed to read the next paper.

M. N. MACALISTER, *Hon. Sec.*

Notes and News.

The Editor will be glad to receive items of professional interest for these columns.

Veterinary Surgeon Charged with Cruelty.

SEQUEL TO OPERATION ON A DOG.

At the West London Police Court on Monday, before Mr. Marshall, Edward Sewell, of Thurloe Place, South Kensington, appeared to answer an adjourned summons taken out by the R.S.P.C.A., charging him with cruelty to a dog by "subjecting it to an operation which was performed without due care and humanity."

Mr. Polhill prosecuted for the society, and the defendant was represented by Mr. J. D. Cassels.

The defendant, who was stated to have been struck off the register of the Royal College of Veterinary Surgeons in 1917, and who acted as assistant to his son, Mr. E. J. B. Sewell, a qualified and registered veterinary surgeon, was alleged to have been called to perform an operation on the night of March 31st on a bull terrier bitch belonging to Mrs. Veitch, of Courtfield Road, Earl's Court, and—so the prosecution asserted—so roughly treated the dog that it died the next day. The serious part of the case for the prosecution was that the defendant was supposed to be under the influence of drink at the time.

At this hearing evidence was given by Margaret Parmen, cook in Mrs. Veitch's service, who said that she was of opinion that the defendant had had too much whiskey or other spirits.

Mr. Cassels (for the defence): Did you ever suggest to your mistress, when you observed the defendant's condition, that he should not be allowed to treat the dog?

Witness: No.

Mr. Cassels: When the defendant arrived he was shown into Mrs. Veitch's bedroom, where the dog was.

Witness: Yes.

Mr. Cassels: Mrs. Veitch was in bed and the dog was lying on the counterpane.

Witness: Yes.

Mr. Cassels: The defendant objected that he could not operate on the dog on the bed, and asked that it should be moved to the table.

Witness: Yes.

Mr. Cassels: Mrs. Veitch demurred to that, but eventually the dog was removed to the table.

Witness: Yes.

Inspector Ralph Fryer, R.S.P.C.A., stated that on April 3rd he called on the defendant and told him the complaint made about his operation on the dog. Defendant said: "This is what happened. At ten o'clock on Friday night I received a telephone message to go to Courtfield Road to remove a dead puppy from a bull terrier bitch. On arriving at the house I found the lady in bed and the bitch lying on the bed. The dog was evidently in trouble, there was the head of a dead puppy on the table and I said, 'Someone else has been here.' I didn't want to operate, but the lady pressed me to do so. I started to operate, but seeing the bitch was dying I didn't go further."

Capt. Louis Sewell, of Sewell and Cousens, veterinary surgeons, of Elizabeth Street, Eaton Square, was the next witness. It was stated by Mrs. Veitch at the last hearing that Capt. Sewell (who was a nephew of the defendant's) was her regular veterinary surgeon and that her maid mistakenly 'phoned to the defendant instead of to Capt. Sewell to come to the house on March 31st.

Capt. Sewell now stated that he called at the house on April 1st and saw the bitch, which died within a few minutes of his arrival. He afterwards made a *post-mortem* examination of the animal, and found that it had undergone shocking injuries, which, in his opinion, could only have been inflicted by an unskilful operator.

The witness was cross-examined at length by Mr. Cassels, and admitted that at least one injury might have been caused by any operator, however skilful, and that there was such a thing as spontaneous internal rupture in the case of a bitch in labour. He agreed that it was

remarkable that, supposing the animal was subjected to the rough treatment alleged, it was extraordinary that it should have lived so long.

For the defence, Mr. Cassels said that the defendant had been in practice for forty years and bore the highest reputation as a skilful veterinary surgeon. It was true he was struck off the register, but that was on the ground that on one occasion he charged excessive fees, and that matter was still under consideration. He indignantly denied the allegation that he was under the influence of drink during this operation, and would call witnesses to disprove that suggestion. Counsel added that it was significant that the chief professional witness for the prosecution was Capt. Sewell, the defendant's nephew, between whose family and the defendant's there had been unfriendly relations for some years.

Evidence for the defence was given by veterinary surgeons, who testified to the defendant's skill and humanity in operations, and by his daughter, Miss Doris Sewell, who stated that on this particular evening—March 31st—her father was quite sober.

Mr. Cassels intimated that at the next hearing he would call the defendant himself and another witness, and the magistrate adjourned the case till Saturday, when he would conclude the hearing at the South Western Police Court.—*Kensington News*, May 19th, 1922.

Rabies at Southampton.

A Muzzling Order.

The Ministry of Agriculture states that a suspected case of rabies at Southampton has been confirmed by the authorities. The animal, a dog, came from Itchen.

An order has been issued by the Ministry of Agriculture requiring the muzzling of dogs and prohibiting the movement of them in a certain area of about 15 miles around Southampton. The area in which the movement of dogs is restricted is west of Portsmouth, and extends up to approximately New Alresford. Then, from there, due west to the western boundary of Hampshire, then down the boundary, including four parishes in Wiltshire, down to Fordingbridge and east of Ringwood.—*The Times.*

In view of the fresh case of rabies in the United Kingdom, an order has been issued in Ottawa prohibiting the importation of dogs into Canada unless accompanied by a certificate from the Ministry of Agriculture that the dog is not from an infected area and has not been exposed to infection.

Foot-and-Mouth Disease.

For the week ended the 7th May, 1922, the number of premises declared to be infected was four, the same as in each of the preceding three weeks. All the four were in Yorkshire (W.R.). One of these (at Leeds) was suspected to have been connected with Leeds Market, which is only 200 yards distant, or possibly due to offals from slaughter-houses. In view of the suspicion attached to the market, Leeds market was closed. The other three cases, which were at Selby, were all connected. The origin is suspected to be due to slaughter-house offals from Leeds. The outbreaks were dealt with by slaughter involving 44 cattle and 53 pigs.

On the 6th May the general restrictions were again modified by the release of Lindsey (Lincs.), the greater part of Cheshire and Lancashire, large areas in the three Ridings of Yorkshire, and certain parishes in Perthshire and Forfarshire.

Two new outbreaks of foot-and-mouth disease have recently been reported from Scotland—one from Blackadder Mains, Edrom, Berwickshire, where a large number of cattle have had to be slaughtered; and another on the premises of Mr. James West, Edenbank Dairy, Longstone, Edinburgh, where the disease appeared last February. On the previous occasion the stock was slaughtered, and the buildings, which were thoroughly disinfected, remained vacant until three weeks ago, when they were re-stocked. A large area has been scheduled, including the greater part of Midlothian, and portions of East Lothian, West Lothian, and Peebles. In England, also, fresh cases are reported, at Wistow, in Leicestershire, and at Height Farm, Midgley, near Halifax. In consequence of the latter outbreak, the whole of the Calder Valley district is again a scheduled area. The previous order, which had been in operation for several months, was only withdrawn last week.

The Cattle Trade Committee of the City of Newcastle have decided that Mr. Thomas Parker, the city veterinary inspector, be the chief witness for the purpose of tendering technical evidence in behalf of the city before the Departmental Committee on foot-and-mouth disease.

It was stated that the Association of Municipal Corporations had unanimously agreed that Mr. Parker be also their chief witness before the Departmental Committee which will meet in Newcastle at an early date.

Australian Ban on British Cattle.

The authorities at Australia House have received confirmation of the news that a ban has been placed upon the import of cattle and swine from the United Kingdom and Ireland into the Commonwealth until October 1st.

No particulars as to the reasons underlying the embargo are available, but it is presumed that the Australian quarantine authorities are nervous on the score of the possible introduction of foot-and-mouth disease. The export of live stock to Australia from this country is comparatively small and is in the main restricted to stud animals.—*The Times.*

Seagulls and Foot-and-Mouth.

The theory that seagulls may be a means of spreading the infection of foot-and-mouth disease is supported by Mr. J. Scott Bowden, Cumberland county veterinary inspector, in his report to be submitted to the Cumberland County Council. Mr. Bowden deals with the foot-and-mouth disease epidemic so far as it affected Cumberland, and states that 299 cattle and 80 sheep were slaughtered, of which 108 cattle and all the sheep were affected with the disease. "If we have got through the most serious outbreak of disease the country has known since 1884 with the small loss of 108 cattle and 80 sheep," says Mr. Bowden, "it is testimony that immediate slaughter is a sound, business, and economical proposition."

Dealing with possible sources of infection, Mr. Bowden says that in the Irthington case, where 80 sheep were infected, there had been no movement on to or off the farm for two months to account for the outbreak, but residents had noticed for some days beforehand an unusually large number of flocks of seagulls which had apparently come inland because of a storm. He agreed with the theory that the gulls might have previously alighted on land where the disease had existed before settling in the field where the sheep were.

Poultry Research.

National Institute Scheme Approved.

The National Poultry Council has been informed by the Ministry of Agriculture that the revised scheme of operation for the educational and research work of a national poultry institute has now been approved by the Development Commissioners, and that the Treasury will sanction the payment of the promised grant.

The amount of the grant for capital expenditure is not to exceed £19,500, and is conditional on a further sum of £6,500 being provided by the industry, to complete the £26,000 which, it is estimated, will be required under this head. As the scheme is to be financed out of the fund provided under the Corn Production Acts (Repeal) Act, 1921, it is understood that the maintenance grant (estimated at £6,000 per annum) is limited to a term of five years, at the end of which time it will be subject to reconsideration by the Treasury. The starting of this work depends now on the promptitude with which the contribution from the industry is raised.

A South African Show.

At the annual show and industrial exhibition held under the auspices of the Witwatersrand Agricultural Society in the Milner Park, Johannesburg, on April 12th to 17th, Mr. Alex. Drysdale, a well-known Scottish breeder (son of Mr. John Drysdale, Edinburgh), achieved a notable success with his herd of pedigree milk record Ayrshire cattle, winning 12 first prizes and 24 other prizes, 5 gold and silver medals, and 5 challenge cups. His winners were all either animals selected from the best herds in this country or bred in South Africa from imported stock. He gained the championship in the male section with Kirkland Admiral, bred by Mr. Wm. Murray, Kirkland, Closeburn, and sired by the champion bull Barboigh Dignity. This bull was awarded the Society's gold medal, the Ayrshire Herd Book Society's silver medal, and also the magnificent trophy (an antique Georgian silver jug) presented by Sir Peter Mackie, of Glenreasdale, for the best male, any age, in the Ayshire cattle section. Mr. Drysdale's herd also provided the female champion with Rockland's Fancy, which also gained the 50-guinea cup for the best Ayrshire animal in the section, the 100-guinea challenge cup presented by Sir Lionel Phillips for the grand champion of the show open to all the dairy breeds, the Ayrshire Cattle Herd Book Society's silver medal for the best female, and the South African breeders' gold medal. For the best group of dairy cattle of any one breed Mr. Drysdale was awarded the 100-guinea cup presented by W. Weddell and Co. (Limited), London. Six breeds competed for this trophy in addition to Ayrshires, viz.:—Dairy Shorthorns, Lincoln Reds, Friesians, Channel Islands, and Kerrys. To crown the great triumph for the Ayrshire breed, Mr. Drysdale was awarded Sir John Ellerman's 100-guinea cup for the exhibitor gaining the highest aggregate of points in the cattle section. It was feared at one time that the Johannesburg show would have to be abandoned owing to industrial troubles, but results exceeded all expectations. Fully 700 cattle were put forward.

Cats and Lime.

A correspondent writes to *Country Life* as follows:—"I was surprised to learn from the veterinary surgeon to whom I took my cat—which came home after a few hours' absence apparently having been entirely immersed in liquid lime—that he received many such cases in a year. As he had never heard of a similar fate befalling any other animal, he had come to the conclusion that lime has some special attraction for cats. Can you or any of your readers throw light upon this subject, or suggest any other cause for an accident which in the case of my cat and of most of those of the veterinary surgeon's experience ends fatally, the animal being so badly scalded that it is necessary to destroy it."

An extraordinary story of how a farmer, Mr. Sydney Peters, when attacked by a stray bull, was saved by a herd of his own cows comes from Mold (Flintshire). Finding the bull on his land, Mr. Peters endeavoured to turn out the intruder, which charged him and threw him three times. The cows stopped grazing, surrounded the prostrate farmer, and guarded him until help arrived.

A Welshpool veterinary surgeon has just executed an unusual commission, having killed in humane manner 27 cats belonging to an octogenarian spinster. The old woman's pets had overrun her establishment, and a relative ordered a wholesale clearance.

Obituary.

Mr. C. E. D. Dayus.

We regret to announce the death of Mr. C. E. D. Dayus, M.R.C.V.S., of Coton House, Craven Arms, Shropshire, where he had been in practice for the last twenty-six years. Mr. Dayus, who was the eldest son of the late Mr. Charles Dayus, M.R.C.V.S., of Dorrington, Salop, was born on December 16th, 1865, and graduated in London, June 22nd, 1886.

He was well known throughout the county, and held appointments under the County Council and Ministry of Agriculture, and during the war was civilian veterinary officer to the Army purchasers and Remount Depot, Ministerley, Salop. He frequently officiated at Agricultural Shows, either as judge or veterinary inspector in Shropshire and surrounding counties and like his father, was well known in the hunting field.

He was also a prominent Freemason, being a past master of the Wrekin Lodge, in London.

Mr. Dayus leaves a widow, two sons and a daughter. The eldest son, Mr. C. V. Dayus, M.R.C.V.S., has succeeded to his father's practice at Craven Arms.

Army Veterinary Service.

London Gazette, War Office—Regular Forces.

May 16th.—Major and Bt. Lieut.-Col. J. J. Aitken, C.M.G., D.S.O., to be acting Lieut.-Col. whilst holding the appointment of Assistant Director Veterinary Services (July 14th, 1921).

Territorial Army.

May 16th.—Capt. J. Anderson resigns his commission (May 17th) and retains the rank of Capt.

Capt. T. Craig, O.B.E., relinquishes his commission (May 17th) under A.O. 166/21, as amended by A.O. 332/21, and retains the rank of Capt.

May 19th.—Capt. R. J. Collings ceases to command a Veterinary Hospital (April 30th).

Diseases of Animals Acts, 1894 to 1914. Summary of Returns.

Period.	Rabies. Cases Confirmed. Dogs.	Rabies. Cases Confirmed. Other Animals.	Anthrax. Outbreaks confirmed.	Anthrax. Animals attacked.	Foot-and-Mouth Disease. Outbreaks confirmed.	Foot-and-Mouth Disease. Animals slaughtered as diseased or exposed to infection.	Glanders (including Farcy).* Outbreaks reported by the Local Authorities.	Glanders (including Farcy).* Animals attacked.	Parasitic Mange. Outbreaks reported by the Local Authorities.	Parasitic Mange. Animals attacked.	Sheep Scab. Outbreaks reported by the Local Authorities.	Swine Fever. Outbreaks confirmed.	Swine Fever. Swine slaughtered as diseased or exposed to infection
GT. BRITAIN.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Week ended 13th May, 1922 ...	1	...	13	13	7	457	...	...	12	22	1	35	5
Corresponding Week in 1921	...	...	7	8	1	12	1	1	32	55	1	33	10
Corresponding Week in 1920	...	...	10	10	...	...	...	...	69	101	5	49	15
Corresponding Week in 1919	12	1	4	4	...	...	...	...	83	199	2	66	28
Total for 19 weeks, 1922 ...	1	...	255	279	1094	52910	...	...	640	951	400	449	153
Corresponding period in 1921	18	1	227	267	28	2669	4	7	1270	1986	359	458	137
Corresponding period in 1920	4	...	186	219	42	2432	9	16	2255	3909	276	844	284
Corresponding period in 1919	79	3	71	96	19	1033	6	30	2787	5197	211	538	192

NOTE.—The figures for the current year are approximate only. *Excluding outbreaks in Army horses.

IRELAND.									Outbreaks			
Week ended 13th May, 1922 ...	1	1	...	...	..	...	3	7	8	46
Corresponding Week in 1921 ...	...	...	...	...	...	...	1	...	...	2
Corresponding Week in 1920 ...	...	..	...	...	..	..	...	1	...	1
Corresponding Week in 1919 ...	...	...	...	..	...	...	1	5	...	...
Total for 19 weeks, 1922	1	1	...	...	...	...	55	111	111	605
Corresponding period in 1921 ...	...	...	2	41	...	...	39	130	23	165
Corresponding period in 1920 ...	1	1	...	...	1	3	60	143	4	16
Corresponding period in 1919 ...	...	...	..	..	1	1	58	144	16	57

NOTE.—The figures for the current year are approximate only.

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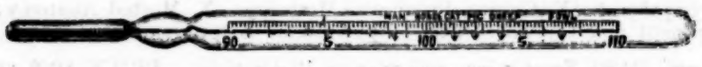

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